Gleanings in Bee Culture

November, 1947 Vol. 75, No. 11

Wintering the Bees

By Roland T. Heacock

How It Is Done in Connecticut

In northern climates the problem of wintering the bees without serious losses is ever present. It is not a problem which can be solved once for all, but as regularly as the seasons come and go it must be faced, worked out, and overcome. Many an experienced beekeeper will tell you that despite his years of experience and his hard-bought skill in handling the bees there are winters when he suffers great losses. The uncertainty of the weather, together with its severity or unseasonable mildness, the difficulty in securing the right quantity and quality of stores, the loss of good queens through accidents, the problem of securing an abundance of young bees late in the fall—these and other circumstances often arise to plague both the novice and the wise, experienced bee master.

Here in New England one may take his choice of two methods of wintering. One may winter his colonies indoors or one may winter them out-of-doors. There is something to be said for each method and I suppose it is a matter to be solved by the personal inclination of the beekeeper. I have tried both methods on a small scale, for I am a small beekeeper, and I hesitate to say which is the better method. On the whole, however, **I am beginning to incline toward out-of-door wintering.** Candor compels me to admit that I have a long way to go before I become a master in the art of wintering the bees, be it indoors or out!

Some years I have wintered most successfully out-of-doors, not losing a single colony despite the blustering winds and deep snowdrifts; at other times the freakish weather and my own stupidity have combined to deal me a knockout blow, lowering my prestige in the neighborhood and causing me considerable humiliation. I have now reached the place where I do not brag about my beekeeping ability until it is late enough in the spring to see how things are going to turn out!

Some years, when I hear the katydids and bluejays calling, I am seized with a mysterious apprehension of the on-coming of an old-fashioned New England winter. Then, frantically, I make last minute preparations, doing a multitude of little things to make the bees snug and

Entered as second class mail matter at Post Office at Medina, Ohio. Published monthly. Subscription price:—1 year, $1.50; 2 years, $2.25; 3 years, $3.00. Foreign 25c additional.

warm in their hives out-of-doors, and after all has been done, decide in the middle of the night that they will be safer indoors this winter on their summer stands.

Every time I do that the winter turns out to be unusually mild and warm, the bees roar and buzz in the cellar, and I get no peace of mind until I put them outside some mild March day. Ere nightfall the temperature has dropped, f r e e z i n g weather of the worst kind has set in, and I have to lug them back down cellar or try to let them pull through it while I say devout prayers to Providence for a change in the weather. I have suspected for some time, however, that my prayers do not get the right kind of reception up above, for the weather goes right on merrily weathering just as it pleases while I have to sweat, or rather freeze it out, along with the bees.

If one has the equipment for it, out-of-doors wintering saves a great amount of work. Where one does not have this equipment, however, there is considerable work necessary in preparing bees properly for wintering this way. I, for my part, find great satisfaction in doing this kind of work in the fall when the frosts have begun to turn the leaves crimson and gold, and the still, prescient mood of autumn is in the air. Then I wander about the apiary drinking in the last sweet drops of summer's nectar, looking fondly at No. 9 which outdid herself this year, giving rapt glances at No. 17, which is a new swarm that heaven sent me, and pondering long over No. 11, wondering if it will pull through the winter. I poke in the stone wall behind the hives ostensibly to see whether any skunks have moved into it recently, but actually just to be feeling the stick against the leaves and stones, and the sun on my back; and I do a thousand and one other little things which go to make the business of getting the bees ready for a New England winter a pleasure and a joy.

Strong Colonies with Plenty of Stores

The first step in successful wintering, whether it be done indoors or out, is to have the colony strong. The next thing to see to is that it has plenty of stores of good quality. Forty pounds of honey is enough for the average hive in my locality, and I am partial to good goldenrod honey, well thickened and smelly. On a late fall day one can breathe the pungent odor of this nectar as the bees rush it into the cells in an ecstacy of excitement. I have found this honey to be good for wintering. It seldom sours, and the plant itself is one of the most dependable honey plants in many sections of New England. When I first began beekeeping I had to learn that I could not rob my bees of all their honey and expect them to come through the winter. It took me a long time to learn the lesson of "ample stores", for I am particularly slow-witted and obstinate. When it comes to beekeeping I always have to get stung at least three times before I learn anything.

The best kind of hive, in my opinion, for out-of-door wintering is a factory made double-walled one. If I were rich enough I would not own anything but these hives, and I would give all my old junky hives to the first poor fool who asked for them. But truth compels me to say that most of my hives are old single-wall hives, and some of them home-made. I have one old hive, a sort of antique which is of double-wall construction with a gambrel roof. The bees always do well in it. I am sure that in the long run these expensive double - walled factory-made hives would more than pay for themselves in extra profits.

In my locality one can winter out-of-doors with single-walled hives providing they are well packed. Ordinary tar paper or any other light waterproof paper can be used, but it must be put on carefully and in such a way as to keep out all moisture and dampness. Inside the tar paper and against the hive itself one may use leaves for packing, but they should be good and dry. Wet, frozen leaves make poor packing, to say the least. On some occasions I have used newspapers, wrapping several thicknesses about the hive and then putting the tar paper outside so that the whole was weatherproof. Dry shavings, such as poultrymen use, would also make excellent material, I believe.

Many successful beekeepers today advocate some sort of top ventila-

Those who have never kept bees do not know the sense of contentment one gets from the soughing of the wind in the pines above the hives, and the joy of walking amid snow-clad hives in winter.

tion. By this is meant provision for an entrance and for air near the top of the hive occupied by the bees. This top entrance allows the moisture which collects inside the hive to escape rather than to accumulate and freeze. Besides this, deep snows and ice storms freeze and stop up the bottom entrance completely. A melting snow and sudden drop in temperature where no top entrance is provided can prove disastrous to the colony. The top entrance, therefore, is really a sort of safety valve. From my experience as a small beekeeper over a long period of years, I would say that it is highly valuable as an aid in successful wintering, at least in my locality.

Now that I stop to reflect upon it I wonder why someone did not discover the necessity for top ventilation long before this. I know I have suffered losses in many a winter through lack of it. Not so many winters ago I lost a fine large colony by having it literally frozen to death because of moisture within the hive. The colony had been placed on the south side of a building to protect it from the winds, but when I examined it in early spring I found it dead with the cluster frozen into a solid mass. All around it there was plenty of sealed honey, but neither this fact nor the fact that the colony was a large one saved it from the death grip of moisture.

Bees need protection against cold winds. Moving currents of air loaded with cold can do great damage to the colonies. To combat this incessant flow of currents in and

B & Z Library

around the hive the bees must consume more stores and keep up greater activity within the hive to generate heat, all of which, over a sufficiently long period of time, pulls down the resistance of the colony and weakens it. Bees can stand low temperatures, p r o v id e d the hives are kept dry inside and out, and protected from winds. Years ago I built a board fence on the north side of a little bee yard I owned, and later I built a small slab shack in which I wintered the bees on an elevated platform. The bees did well there. Behind the hives I packed dry straw and hay. Mice soon congregated in the shack and founded Mouse City which for a time became a flourishing commonwealth until a huge old yellow tom cat came to town. From that time on I had no trouble with mice.

Right here may be a place to tell of a misfortune which befell my bees one year I wintered them in an old open cellar. The cellar was located on a side hill; it had been built years before, but no house had ever been erected upon its stone walls. It occurred to me that if I moved the bees down into the cellar it would afford excellent protection against the New England winds and storms which usually prevail in winter. I had about 15 colonies, and in the fall I carried them down into this open cellar, arranging them neatly on a homemade platform. Covered with straw they looked cozy and snug, and I went off to college feeling certain that my bees were well and truly wintered.

Alas for my dreams! I had forgotten the vile character of New England weather! Sometime in the mid-winter there came a thaw, the melting snow ran in raging torrents down the hills and mountainsides, the cellar filled up with water, and when I arrived home and went to inspect my bees I found them floating in four or five feet of water. Only two or three survived, and these were mere handfuls clinging precariously to life in little air spaces in the upper stories.

Indoor wintering requires a good, dry cellar. The temperature ought to be controlled in the cellar at least enough to prevent it becoming too warm or too cold. If there is no automatic ventilation one can open the doors and windows once a week for about 15 minutes and allow the fresh air to come in. A temperature of 50 degrees in the cellar is about right to keep the bees quiet. Do not allow moisture to settle and collect in low spots in the cellar. Moisture in the winter, either in out-of-doors wintering or indoors, is an enemy of the bees.

While many great and successful beekeepers have wintered indoors, the little beekeeper will probably find it risky and uncertain. The colonies will frequently come out of the cellar weak, and they will seldom walk right up to full strength in the spring as rapidly as colonies which have wintered on outdoor stands. Why this is, I don't know. Yet on the other hand, I might as well confess that I have lugged many a colony indoors and saved its life in mid-winter. My philosophy is that sometimes it is better to have a few weak colonies in the spring than none at all. Half a loaf, you know!

It may be that one reason out-of-door colonies do so well is that they have built up a resistance, have consumed more stores, and raised more brood. Whatever plan one decides to follow, however, it is well worth remembering that it is not so much the plan as the man behind the plan that counts.

As for me, I love an outdoor apiary in winter. How peaceful and attractive the hives look when they are covered in white, and the trees and fields lie wrapped in winter's solemn hush! The little field mice leave their double tracks around the hives where their prying eyes have sought holes and their dainty noses scented the sweets they would so much like to devour. Now and then, if the apiary is located in the country, one will see where a deer or a fox has walked through the yard fearlessly, knowing full well that now the world belongs again to them and there is no danger. After a warm night skunk tracks, cat-like, may be seen zig-zagging among the hives where the owner of the black and white coat has calmly used the apiary for a right of way.

How proud am I, in the winter, as I walk among the snow - covered hives and look to see that every-

thing is snug and tight! I closely examine each hive to see that all is well. Here, where a piece of tar paper wrapping is a little loose, I secure it tightly; there, where the frost has closed an entrance I stoop and dig it open with my Jack-knife.

I am sorry for all those people who have never known the joy of beekeeping, especially the joy of walking amid snow-clad hives in winter. They do not know the sense of contentment one can get from the soughing of the wind in the pines above the hives, from the glint of sunlight on an old stone wall, or the chirp of the junco in the dry rustling weeds. Here, amid the hives I have discovered all that life is and can mean, the irresistable march of the generations, the impulse toward life, the goodness and presence of God.

Now, when the year is over, and my failures and blunders, my unfulfilled dreams are behind me, I do not so much count the amount of honey which has or has not been made as I do the million and one little thrills of joy and happiness these tiny insects have brought me. All the high adventure of life has paraded before my door; I have walked arm in arm with reality, if you please, seen births and deaths, anger and sorrow, confusion and contentment. Here, I have seen the Universe unfold.

And even as I stand amid the snowdrifts, with the cold wind blowing upon my face, I think of the summer days behind and my mind, ever hopeful, is a-tingle with seedling plans for the coming spring. The cold wind and the snow disappear; I see the trailing arbutus and the pussywillows blooming; hear the peepers in the swamp where the skunk cabbage is growing; I hear the bees humming in the cherry and basswood trees, and smell the fragrant wild raspberries. The fields are not white with snow, but with white clover.

It is spring again and in the warm sunshine the bees are gathering their golden treasures into their hives, humming in contentment.

And I say to myself, and to God, that it is good to be a beekeeper, and to be alive.

Staffordville, Conn.

The Passing of William D. Achord

Our industry has lost an outstanding beekeeper and friend in the death of W. D. Achord of Findlay, Ohio, on September 23.

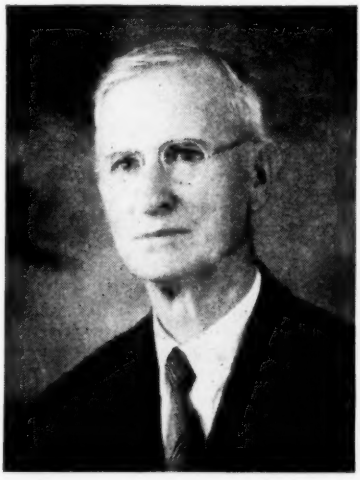
Mr. Achord was born in Sparta, Georgia, in 1870. As a young man he engaged in watchmaking and later on served as foreman of a cotton mill.

Because of ill health he was forced to find outdoor work and he chose beekeeping. He operated an apiary in Florida for a time, then moved to Fitzpatrick, Alabama, where he started producing and shipping bees and queens. He was one of the first, if not the first, to successfully ship package bees from South to North. He first used candy as a food in the shipping cages but later changed to sugar syrup. He soon enlarged his holdings to over 1000 colonies and shipped bees to all parts of the continent.

In 1925, because of failing health, he sold out and moved to Findlay, Ohio, where he has since kept a few hives of bees.

Mr. Achord, an ardent believer in honey as a food, was a loyal supporter of our American Honey Institute.

His kindly smile and wise counsel will be greatly missed.



Mr. W. D. Achord

Improvised Extracting Equipment

By Harris C. Harvey

Up until recently I prided myself on uniform, factory - built equipment. But in the recent war years I guess we all used what we could get and no back talk.

Old hives of all sorts were bought up and scorched out. We had bottom boards of the toughest oak—left over, I think, from the famous "One Hoss Shay". Hive bodies of most anything, with or without dovetail corners and nearly as heavy empty as the old ones were when full. Frames came made from edgings, rough and some with the bark on, and we wired them with wire intended by the manufacturers for coil springs. (But first we had to drill the holes in the end pieces.)

But when it came to hardware, there wasn't much of anything that we could interpret as belonging to honey production. So we had to improvise.

Fig. 1—Extractor with motor drive and storage tank made from ash can. Note tray to catch drip from extractor.

Working long hours in a war plant and with no one to help, we had to limit the number of colonies to what we could neglect with a reasonable degree of success, and try to eliminate enough bottlenecks to make one man's effort equal two.

I began with the uncapping tank shown on the opposite page. It was made from the metal lining of an old ice refrigerator. (By the way, this ice-box also yielded about two bushels of granulated cork for packing hives.) Partitions were removed and holes soldered up and a honey gate put into the end.

A removable rack covered with ¼-inch hardware cloth was put in two inches above the bottom for the cappings to fall upon and drain. I used to dry my cappings in the extractor, but I have found that by stirring them up occasionally they drain as dry on this rack and it

Fig. 2—Double processing tank made of nesting tubs. Also handy for warming thick fall honey before straining.

saves a lot of work cleaning the reel.

A wooden frame was built around the top of the tank just wide enough to hold frames either as they would set in the super or set on a slant. This let uncapped frames drain into the tank and I can uncap 20 frames without the nuisance of their dripping on the floor. A cross-piece near the center has a sharpened nail to rest frames on when uncapping.

Next was the extractor. A three-frame hand job. I couldn't see myself turning a crank with one hand and uncapping with the other. So I picked up a motor from an old cloth cutting machine (traded some honey for it), which has thrust bearings to run in a vertical position. So with two pulleys, a piece of shaft, and a V-belt the extractor was fixed up as shown in Fig. 1. The reel runs about 375 rpm and does a more thorough job than I would take time to do by hand.

What to strain the honey into? No tanks could be bought. But trips to several hardware stores yielded some large ashcans and varying sizes of molasses gates. These when fitted with wire screen baskets to hold cheesecloth bags answered the purpose. (Fig. 1.)

But the greatest bottleneck of all was the time consumed in packaging the honey. I had been bottling it and then heating the jars in water as I had the opportunity. This was unsatisfactory for several reasons besides the time and fuel consumed.

I tried for over a year to find something out of which I could build a double boiler and finally found two tubs in a little country store. A No. 61 and a No. 62 tub fitted into each other with a one-inch space all around. (Fig. 2.)

I got some strips of punch press scrap (metal remaining after parts have been punched out) and soldered them to form a rim around the bottom of the inner tub to support it above the bottom of the outer tub high enough to admit a ¾-inch elbow and pipe leading from the center of the inner tub to the outside and terminating in a honey gate.

Support brackets of the same perforated metal strip were fastened between the tubs at the top to hold them securely. A pet cock was in-

(Continued on page 694)

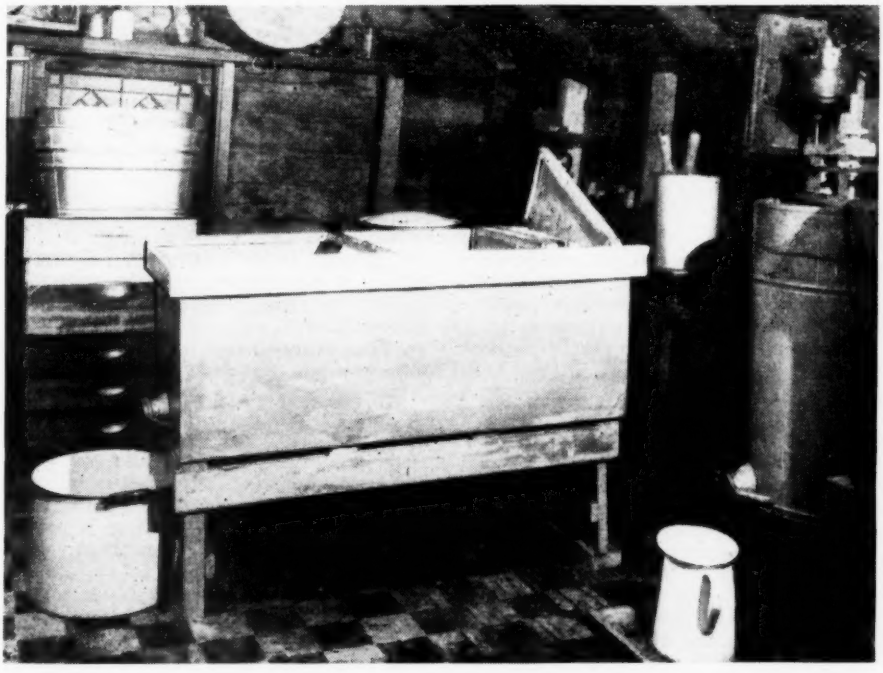


Fig. 3—Uncapping tank made from metal lining of an old ice refrigerator.

The Relation of Agricultural Chemicals to Beekeeping

By J. E. Eckert
University of California, Davis, California.
(Taken from Federation News Letter for July-August, 1947)

[Dr. Eckert is Chairman of Agricultural Relations Committee of our National Federation.]

The use of agricultural chemicals affects beekeeping in several different ways: (a) They may cause the death of bees that come in contact with the chemicals deposited on plants the bees visit for nectar and pollen. (b) The chemicals may cause the reduction of available nectar and pollen sources as in the indiscriminate control of weeds; and (c) the proper use of agricultural chemicals could increase the nectar and pollen from certain plants by preserving plants and blossoms from destructive insect pests. In order to conserve time, this subject will be discussed briefly under these three headings.

Factors Connected With the Direct Injury of Bees by Chemicals

The type, kind, and amount of chemical: Honeybees are injured by many of the contact or stomach poisons applied in the control of other insects. These chemicals include all of the arsenicals, fluosilicates, cryolite, tarter emetic, rotenone, DDT, 666 hexaethyl tetraphosphate, DN compounds, and many others. Of these, the arsenicals are the most toxic and are causing the most serious losses. Its extreme toxicity of one half part per million, its widespread use as an insecticide, and its indestructible nature makes it the arch-enemy of all pollinating insects whenever it is applied to plants in bloom or permitted to drift over other plants in bloom. Fundamentally, it is a poor insecticide because it has to be applied in such large quantities in order to give economic control. The excessive amounts used is one of the important factors contributing to the hazards its use creates for livestock, honeybees, and other pollinating insects.

For example, in the control of tomato insects it has been found that the application of from one pound to one and one half pounds of DDT per acre will give more efficient control of most tomato insects than the application of 21 pounds of arsenic in the form of calcium arsenate. Generally, three applications of each poison must be made, so it would take from 3 to 4½ pounds of DDT as compared with 63 pounds of calcium arsenate.

Consequently, consideration must be given not only to the kind of poison used but also the quantity that is necessary to give economic control and the comparative hazards raised by their use.

DDT acts both as a contact poison as well as a stomach poison when bees come in contact with it or ingest it with their food, but so little of the material need be used for various crops that it has not proven to be nearly as injurious to bees as the arsenicals. The fact that it acts both as a contact as well as a stomach poison makes it immediately more effective against a greater variety of insects than the stomach poisons. Since bees visit mainly the flowers of plants and do not crawl over the stems and leaves, as a general rule, the danger of poison as a contact insecticide is thereby minimized, especially so if the minimum amounts are applied when the plants are not in bloom.

Rotenone and the nicotine dusts, that deteriorate rapidly on exposure to sunshine and other atmospheric conditions, are far less dangerous than the arsenicals. The compound DN-111 is reported as injuriously reducing the strength of colonies when applied to trees in bloom. Hexaethyl tetraphosphate, while injurious to bees soon after it is mixed, loses its toxicity within two or three days under laboratory conditions and more rapidly under field conditions.

The elimination of the arsenicals, then, in favor of less toxic substances such as DDT, or 666, or Chlordane—all of which need be applied only in minimum quantities to give economic control of a wide variety of insects—would immediately reduce the hazard of chemical poisoning to a more economic level, all other conditions remaining the same.

The method of applying chemicals: The manner in which chemicals are applied and the proper timing of the applications are important both as to the efficiency of the

chemical in insect control and to the hazards the poisons cause to agricultural industries. As stated previously, dusts are far more hazardous than the use of mists or sprays because dusts cannot be confined to the field or crops treated. The lighter the dusts and the finer the particles, the more extensive will be the amounts that drift from the fields. The use of the airplane in applying dusts to crops has grown tremendously since it was first advocated and used by federal authorities in Texas in the treatment of cotton crops. The amount of poisons that drift from the fields treated during applications by airplanes is always extensive and frequently amounts to from 25 to 50 percent of the amount of dusts applied. These dusty clouds may drift three miles or more from the fields treated, poisoning all vegetation in their path. Highly powered blowers and other ground rigs also cause destructive amounts of poisons to drift when the applications are made during the heat of the day or when there is any air movement.

The application of chemicals in concentrated form through the use of mists or sprays, or even a combination of mists and dusts, materially reduces the hazards arising from drifting poisons. Had these methods been developed instead of the use of dusting machinery, the present chemical hazards to beekeeping, seed growing, livestock, and other forms of agriculture would not be as serious.

Manner in which bees are killed by poisons: Honeybees and other pollinating insects secure poisons in several different ways. The nectar gathering insects are poisoned by chemicals being deposited in the nectar of flowers. These nectar gatherers die in the fields, particularly in cases where the arsenicals are involved. That this is true is borne out by the fact that chemical analysis of honey taken from colonies that have been killed by arsenical poisoning never contain arsenic. The workers gathering pollen do so by collecting the pollen on the hairs of their bodies and storing it in pollen baskets in their legs. Unless the poison acts on contact, the bees can gather pollen without any serious injury to the gatherers. However,

Dr. Eckert in the apiary of the University of California.

when this poisoned pollen is stored in the combs and is used by the nurse bees in the elaboration of food for the larvae, the poison kills the nurse bees and the larvae. In the case of arsenical or cryolite poisoning, young nurse bees that have never left the hive before will be found dead or dying on the ground in front of the hive. In most cases, where the bees get only a small amount of arsenic they will leave the hive and hop and hop and try to fly until they become lost and exhausted.

For these reasons a populous colony may lose its population within a few days without a large number of dead accumulating in front of the hive.

As long as the poisoned pollen is present in the hive, it will constitute a source of injury to the colony. For this reason a colony may be killed within a few days or may be gradually reduced in strength over a period of weeks and even months. It may live over winter and be slow to build up in the spring. In either case, the pollinating insects in the area will be reduced by several thousand bees for each colony thus affected. Poisons that affect the honeybees can be expected to affect the solitary bees as well.

The use of chemicals in weed control: The use of 2,4-Dichlorophenoxyacetic acid, or more commonly known as 2,4-D, as a herbicide, is getting about as much publicity as was given DDT a few years ago. This chemical is applied either as a dust or in solution for the control of such plants as the thistles, nettles, chicory, dandelion, plantain, teasel, mustards, heartsease, asters, sweet clovers, and other plants with broad leaves. It will also kill broad-leaved cultivated plants such as cotton, beans, clovers, and others. It has been applied to thousands of acres of rice, grain fields, fence rows, and along roadsides and ditch banks during the past few years, and the vast amount of attention it is receiving indicates that it will be used in ever increasing quantities in the near future.

It seems that those who are pushing its use apparently desire a weed-free world just as do some chemical interests picture an insect - free world. It is agreed that we could get along without many of our destructive insects and a vast number of weeds—especially in our cultivated areas—but what would the world be like without insects or weeds? It must be remembered that a majority of our fruit, vegetable, and seed crops require the pollinating services of the honeybee or other insects to be fruitful, and without these services production of such plants is greatly curtailed. A reduction of all pollinating insects below an economic level would change our entire economy.

Many cities, counties, and state interests are using 2,4-D, fire, oil, and other means to destroy all weeds along the roadsides, ditch banks, and waste lands. True, some of them need to be destroyed to safeguard agriculture and the use of certain chemicals is far cheaper than by other methods. But what are some of the consequences that will result unless some thought is given to the preservation of the pollen, nectar, seed, and nesting sites certain of these plants afford for our song birds, wild life, and pollinating insects? The vegetation along the roadsides, ditch banks, and fence rows provides shelter and food for a majority of our wild life, our game birds, and a majority of our solitary insects. The mustards, sweet clovers, willows, asters, and other plants too numerous to mention provide pollen and nectar for colonies of honeybees to build up their numbers sufficiently to be most effective in the pollination of our orchard and field crops. As far as beekeeping is concerned, unless there is a proper balance of these sources throughout the year, the colonies will not be able to maintain themselves in many locations and will have to be moved by the commercial beekeepers to more favorable locations.

Personally, it seems to me that the indiscriminate use of 2,4-D could have a more lasting effect on the value of a beekeeping location than the use of arsenicals because the plants that support the entire economy of the colony prior to the use of bees for pollination services or for honey production, could be destroyed. The chemical, as such, should be applied before the plants come into bloom and so need not constitute a source of poison to bees. Many of these same weeds constitute a major source of honey to compensate beekeepers for the care of their colonies. This is especially true of the sweet clover, asters, yellow star thistle, and dandelion.

Some benefits to beekeeping of chemical control of insects: The recent substitution of DDT, Chlordane, and others of the newer chemicals for the arsenicals has not only increased the efficiency of insect control but has greatly reduced the hazards arsenicals have caused to beekeeping and to other agricultural interests. For this reason, this substitution has returned a direct benefit to all growers by the preservation of the pollinating insects.

The timely use of Chlordane, DDT, 666, and other chemicals in the control of various insects such as boll weevil, curculios, codling moth, potato insects, tomato insects, and on other plants in place of the arsenicals, could make available a vast quantity of nectar and pollen, uncontaminated with toxic substances that would enable the beekeeper to maintain a sufficient number of colonies in all agricultural areas to adequately pollinate all crops that are benefitted by insect pollination. This is particularly

true in those sections devoted to the growth of cotton, deciduous fruit, and legume seed (alfalfa, sweet clover, alsike, and the other clovers). Bees do not visit the tomato or potato plants, but the use of arsenical dusts on these plants kills bees when the dusts drift over the fields containing other plants in bloom.

Conclusions:

1. The indiscriminate and untimely use of agricultural chemicals, and especially the arsenicals in dust form, is seriously reducing the number of pollinating insects below the economic level.

2. Nectar gatherers are killed in the field while poisoned pollen, stored in the nests or combs by pollen gatherers, kills the larvae and nurse bees.

3. The drifting poisons are far more serious than chemicals applied in mist or spray form.

4. The proper use of many newer chemicals that are less toxic to pollinating insects and to domestic animals has greatly reduced the hazards erected by the application of such toxic substances as the arsenicals, fluosilicates, DN compounds, and cryolite.

5. More efficient equipment and methods of applying poisons in minimum quantities as sprays or mists will greatly reduce present hazards.

6. The elimination of all plant growth along fence rows, ditch banks, roadsides, and waste places could have a more serious effect on eliminating our pollinating insects and wild life than the present indiscriminate use of arsenicals and other poisons. A combined use of the herbicides and insecticides is extremely serious.

7. The proper use of many newer chemicals as substitutes for the arsenicals, and more toxic compounds would permit a correct balance of pollen and nectar plants favorable to the maintenance of pollinating insects at an economic level.

French Beekeepers Receive Queen Bees From the U. S.

The French beekeepers take this opportunity to express their appreciation for the generous and sympathetic gesture of their American colleagues who have made gratuitous shipments of queen bees to replenish their breeding stocks.

The distribution of these queens was handled by the Groupement des Eleveurs de Reines et d'Essaims (Association of Queen and Bee Producers), who have placed them to the best advantage of all French beekeepers. To do the most good the queens were sent to queen breeders, more particularly to those most seriously affected by the war.

All who were fortunate enough to receive these queens are unanimous in their praise of the apparent high quality of the queens and the care exercised in packing them for shipment. It is evident to the French queen breeders that their American brothers have used great care in selecting the queens in order to give the greatest benefit and pleasure to the French beekeepers.

The French beekeepers have asked me to send this message of thanks and especially to thank Mr. E. C. Bessonet, Bessonet Bee Company, Donaldsonville, Louisiana; Mr. H. C. Short, Fitzpatrick, Alabama; and Mr. R. C. Daniels, Picayune, Mississippi, breeders who so generously provided the breeding stock. I am also asked to thank Mr. Jas. I. Hambleton of the Bee Culture Laboratory for his assistance.

I wish to add my own very sincere thanks and appreciation to these American queen breeders. I hope it will be possible in the near future to give them an account of the results derived through the use of their queens. If it were possible for queen breeders to come to France I am certain they would at once fully realize how sincerely and appreciatively these queens were received by my fellow beekeepers.—M. Rousseau, Ministere de L'Agriculture, Laboratoire National Apicole, Bures - sur - Yvette, France.

Don't Try to Fence Bear—Trap Them

By Lewis White

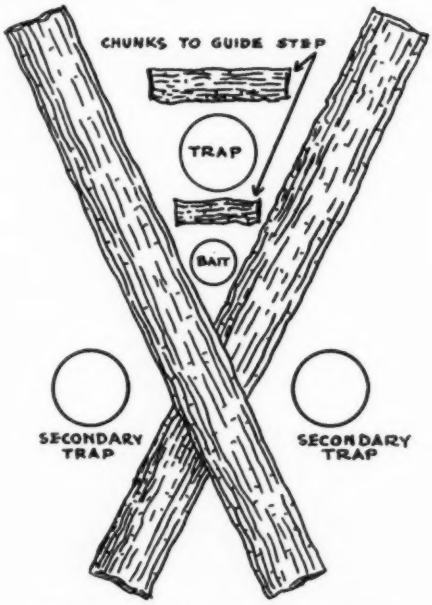
[In Gleanings for March, 1947, there appeared an article "Bear and More Bear" by H. H. Selwyn, Ottawa, Canada, in which he describes a method of using an electric fence. Lewis White, a commercial beekeeper from Portland, Oregon, also lives in a bear country. After reading Mr. Selwyn's article, Mr. White wrote to him, telling him about the methods used against bear in his part of Oregon. This letter constitutes the following article.—Ed.]

I wouldn't give two cents for an electric fence around one of our apiaries. We have a lot of units but abandoned them many years ago. We could not depend upon them. If they don't happen to get shorted out, a bear may leap into the yard as well as backwards when shocked. If he happens to leap in he'll make a pretty mess of the entire yard trying to get back.

We find the easiest and most economical way is to trap them. Bear generally are in the neighborhood for days before getting into the bee yard. They seldom go into a bee yard without first looking it over. We get most of them before they get into the yards. We make sets often a half mile from the bee yards. Our country is mountainous and I prefer to make the sets well up in a draw or gully where the air currents move upwards and downwards, and the bear is sure to cross these air currents sooner or later if in the area and then lead into the traps. They generally come up out of the gullies into the bee yards but occasionally one will follow the ridge into the yard. When one gets into a yard we make blind sets without bait, right near the yard where he comes out of the gulley or follows the ridge.

All sets away from the yard are baited with chopped liver mixed heavily with oil, but mostly with fish heads, bones, guts, and general garbage. These sets are good for a month or more—even after the maggots have cleared the refuse the oil and scent is still in the soil and we get them more often in the old sets as they are not so suspicious of it. We try to check once each week during the late summer season which is the time they travel around more.

If one is staying near we often use potassium cyanide — the 96% stuff—putting two large capsules in



This bear trap has proved effective

a piece of comb honey about 1½ by 4 inches. We put this on their trail at dusk and take it up early the next morning. It is very deadly—take no chances. The bear will seldom go over 100 yards.

We dig out a basin in the earth so that the top of the trap will be flush with the original soil level. Be careful about overturning sticks, chunks, or rocks. They are suspicious of them as they show by their unweathered exposure that the place has been disturbed. Put a little ball of fern or something that does not wilt easily under the pan of a trap so that squirrels or other small animals will not trip the trap. Put a piece of cloth over the entire trap to keep the earth from packing around it. Be sure to tear a split where the trigger is so the cloth will not prevent the trigger flying up to release the trap. Then cover the cloth and trap, chain, and everything with fine powdered soil.

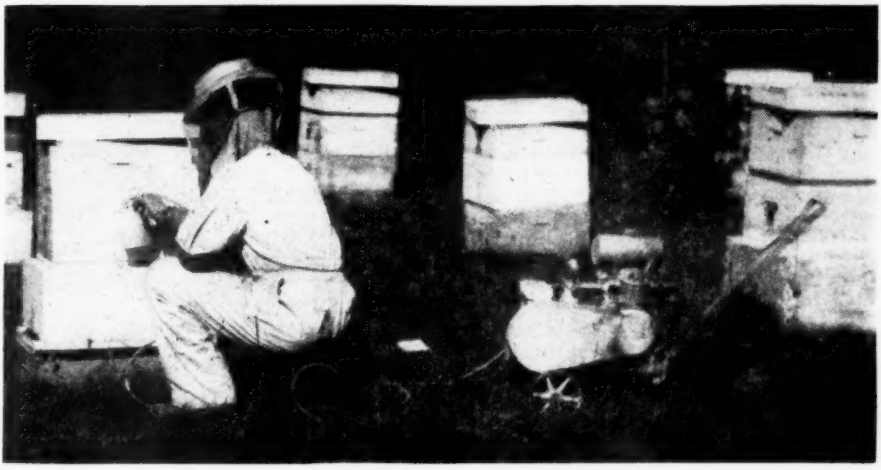
Before placing the trap we place a wire cable or chain from the trap ring to a heavy drag. We use a railroad tie or piece of log about

that size, fastening the cable or chain very securely in about the middle of the drag. Be sure it is fastened very securely both to the trap and to the drag as it generally gets pretty rough treatment and they will gnaw it if you don't happen to get back for several days. We use large spikes to keep it from slipping off the drag.

The "blind sets" can be successfully made in the open if no logs or poles cross the trail of the bear, but the set is much more sure where he steps to or from some small log. Above I stated the trap should be covered with fine soil—this applies where the set is on bare ground. If the set is made when there is grass or weeds the trap should be covered thinly but completely with fine dry grass or weeds. Always finish your set to look as natural as possible.

Occasionally we find a bear who is trap-wise or trap-wary. Then we set a second and sometimes a third trap and always get him while he is "looking over" the main set. These secondary sets can also be made with a blind set if you figure about where he will go in avoiding the main set. Be sure the secondary sets are well concealed. Also be sure your sets are posted as required by law. We prefer the bait sets as they can be made in suitable and easier to prepare locations, and the bear will come to them, while blind sets must be made where the bear makes a trail. The "V" of the bait set can be where two logs happen to cross, a root formation, small logs, large poles, or railroad ties.

Painting Bee Hives



Spraying paint on with a gun while bees are in hives

The great majority of beekeepers take pride in the appearance of their equipment, but painting bee hives by the brush method involves a great deal of labor especially for the commercial man with outyards. We have solved this painting problem with our portable sprayer and it certainly is a time saver. One man can paint 20 or more two-story hives per hour depending upon the condition of the hives in the apiary.

At the peak of the honey flow when all the supers are on is an ideal time to paint, as supers can be piled up eight high and painted.

To avoid clogging of the spray gun strain paint through fine wire cloth. Using aluminum paint we mix in about ⅔ pint linseed oil to one gallon paint. Other types of paint require about twice as much thinning. The consistency of the paint has to be just right for best results and this can be arrived at by testing through the spray gun. One gallon of aluminum paint will cover about 25 two-story hives if the surface of the wood of the hives is not too weather beaten.—William G. Garnett, Petoskey, Michigan.

For Thanksgiving Dinner

By Mrs. Benj. Nielsen

Proud Thanksgiving turkey with luscious honey-glazed cranberries. —Photo courtesy Kellogg Co.

Once again the relentless march of time has brought near our national day of thanksgiving and we turn our thoughts to planning the menu for Thanksgiving dinner.

A recent direct appeal for aid from an apiarist in war-torn Poland very forcefully brought home to us how very much we in a free America have to be thankful for. He humbly asked for used clothing for his children and supplies with which to rebuild his ravaged apiary. We citizens of free enterprise should humbly give thanks that we have the tools with which to build and earn and the opportunity to use them. As we bow our heads in thanksgiving, let us envoke blessing and comfort for this one and the many other unfortunate victims of war-ravaged countries.

With no other type of food does honey combine more satisfactorily than with fruits. The natural sugars of fruits and honey make an exquisite blend sweet-toothed folks cannot resist repeating again and again. Honey - glazed cranberries are a culinary triumph worthy of accompanying the biggest, brownest turkey to the Thanksgiving festive board. To prepare them wash and pick over 1 pound or 4 cups of cranberries, add 1¾ cups hot water, and cook about 10 minutes, or until all skins have popped. Then add 1 cup honey, and continue to simmer, not boil, until slightly thickened.

Cranberry tarts with their crunchy, flaky bran crusts, are toothsome tidbits. For the crust you will use: One third cup bran, 2 cups of sifted flour, ½ teaspoon salt, ⅔ cup shortening, and about 5 tablespoons of cold water.

Crush bran into fine crumbs, mix with flour and salt. Cut in shortening, add water a little at a time until dough is just moist enough to hold together. Roll out on lightly floured board, cut into rounds, and shape over OUTSIDE of small muffin tins, prick generously with a fork. Bake in hot oven, 450 degrees F., about 15 minutes or until lightly browned.

For the filling wash and pick over 4 cups or 1 pound of cranberries; add 1¾ cups of hot water, and cook for about 10 minutes, or until the skins have popped. Add 1 cup of honey and bring to boiling point. Place over rapidly boiling water and gradually stir in 3 tablespoons of quick cooking tapioca. Cook until clear, stirring constantly. Cool and spoon into baked tart shells. Delicious served with honey-sweetened whipped cream.

If the dinner is a heavy one, this fruity dessert will prove a happy ending.

Honey Apricot Pudding

One tablespoon or 1 envelope plain unflavored gelatine, ¼ cup cold water, 1½ cups canned or dried cooked apricots and juice, ¼ cup honey, ¼ teaspoon salt, ½ teaspoon lemon juice, 1 cup whipping cream, or ¾ cup evaporated milk, whipped.

Soften gelatine in cold water. Combine fruit pulp and juice, honey, salt, and lemon juice. Heat to steaming point. Remove from heat. Stir in gelatine until dissolved. Chill until mixture begins to thicken. Whip cream (or ¾ cup evaporated milk, whipped) and fold into mold which has been rinsed in cold water, or into sherbet glasses. Chill. Serve plain or with honey - sweetened whipped cream.

Aurora, Nebraska.

Live and Learn

By Propolis Pete

What can a beekeeper do in November? Well, for one thing, that's when I started to keep bees. I don't mean that I got my bees, but I did start to keep them.

It was back in 1934. I had acquired the place I call my farm the previous spring and was itching to stock it with something. Chicks? Interesting, but I needed something that could take care of themselves when I was not around, so that was out. A garden? That would come in time. I had some land cleared, but more had to be done. Besides it would take a couple of years before the land would be fit for my purposes.

I came across a line in a catalog of unusual seeds stating that black locust was excellent pasturage for bees. Bing! That did it. There were a lot of black locust trees on my land. But how in the world could I find out about getting equipment and bees, especially bees. I could not find out anything in the neighborhood because none of the farmers kept bees, and I felt pretty much like a pioneer in a strange land looking for guidance from dim memories of the past.

As a kid I had rowed across Lake Champlain to watch a beekeeper in Vermont work on his bees, and still earlier I had been fascinated by the operations of an orchardist in the Berkshires. As a twelve-year-old I had helped to plant 30 acres of apples. I never did find out whether the owner planted the trees for his bees, or whether he got the bees because of the trees. The fact remains that he got the bees the year he planted the trees, even though it would be a number of years before the trees came into bearing. He must have been a smart apple man, for in those days pollinizing was not as well known as it is now.

When I am not on the farm, I live in a big city—a very big city. I searched the telephone directory, I asked in all the seed stores and nurseries, but no one knew anything about bees or where I could get them. Finally, one nice day while window shopping in the business section I saw a "Country Gentleman" on a news stand. Says I to myself, "If they don't have any ads for equipment, then nobody will". They didn't have any ads, but there was an ad for the American Bee Journal. I wrote for a sample copy, read it from cover to cover without missing a period or comma, spent about a dollar in postage writing to all of the advertisers within a reasonable distance, and here I am.

The first sample copy had a news item about a meeting of beekeepers right in our city. I went to it and was received cordially. I met a lot of fine people, and before I knew it was a member of no less than three associations within traveling distance. With three memberships I had little difficulty finding out how and where to get bees and equipment.

I forgot to say that in my search for light in beekeeping I had seen a hive offered in one of the general mail order catalogs. I had ordered one and put it together all cockeyed before I knew anything at all even about the theory of beekeeping. I still have that hive and it is full of bees. Being naturally a little bit on the dull side, it never occurred to me to write to the mail order company for information. But look at the fun that I would have missed if I had not done it the hard way.

None of the readers of this article will have quite the troubles that I had. Obviously, since they are already reading a bee magazine, they will not have to scramble around the way I did to get my start. But from that point on, I don't think that I can do better than to recommend that they start from here and follow the way I went. That is, to join up with at least one beekeepers' club, learn what they can from them, decide on their equipment and get it ordered, and buy a couple of bee books.

The reason I say a couple is because you can get different viewpoints by reading different authors. Even though beekeeping is fundamentally the same regardless of the system followed, you soon will learn that methods can differ very much. And also keep in the back

(Continued on page 694)

Winter Loss from Colonies and Related Factors

By Ed Braun and John E. Geiger
(Ten Years' Experimental Results 1935-1946)
Dominion Experimental Farm, Brandon, Manitoba.

Part I

Mr. Ed Braun, wife, and daughter

John E. Geiger

[The experimental work here presented by Canadian workers will be of interest to beekeepers in the U. S. A., especially those of the northern tier of states in the plains area.—Ed.]

Beekeepers have frequently argued the pros and cons of over-wintering colonies of bees. In the main the points of disagreement have centered around the assumption that outside - wintered colonies utilize more stores than cellar-wintered colonies; that the age of the queen, the strength of the colony population in the fall or during the winter; or that the origin of the colony (previously over-wintered or established from package bees) are the main contributing factors to successful over-wintering and the subsequent production of good honey crops.

The actual consumption of stores by a colony during the winter months is difficult to ascertain on a mass colony basis. Therefore, in this study all colonies, regardless of whether they were to be wintered outdoors or indoors, were weighed in double brood chambers without covers, immediately after feeding was completed in the fall some time between September 15 and 30. The cellar-wintered colonies were again weighed before storage, around November 1 to 10, and all colonies were weighed again in the spring when removed from the cellar or in the case of the outside - wintered bees, when unpacked from their outdoor packing material. This method permitted the determination of the fall loss in weight; the winter loss in weight and the total loss in weight for the cellar-wintered colonies, and the total loss in weight for the outside-wintered colonies which were frequently packed shortly after the fall feeding was completed, generally during the first week in October.

The loss of weight, therefore, includes not only the weight of food consumed by any one colony, but also the loss in dead bees, and the changing weight of the wooden hive material that might absorb or lose moisture during the interim depending upon the method of storage employed and the relative atmospheric

humidity. However, when the method of weighing was consistent for all groups the loss in weight should be comparable, even though it cannot be stated as consumption of stores data.

The loss in weight from the time feeding was completed in the fall until the colonies were placed on their summer stands can be of relatively little value unless the data were correlated with the spring strength of the living colonies. Therefore, the spring strength was determined on an estimated basis of the number of frames covered by bees, the number of frames of sealed brood, and the number of frames of unsealed brood. The two authors, by examining alternate colonies and switching over at subsequent examinations, found that their estimations were sufficiently similar to eliminate any large source of personal error, and since they made all the determinations on that basis over the ten-year period, they feel that the data is relatively comparable and sufficiently accurate for mass or trend determinations. The same method was used for estimating fall strength or strengths at weekly examinations throughout the season. The yield data were determined by numbering each individual super, weighing it, together with the combs, separately before extracting and again after extracting had been completed.

The summary table, page 658 provides comparative data by which the authors tried to find the answers to the following questions: (1) What was the average winter loss for all types of colonies, their percentage of mortality, their subsequent average, spring and fall strength, and average production? (2) How many colonies fall into the low, medium, and high winter-loss categories, their subsequent spring and fall strength, and average production? (3) What are the differences existing between cellar and outside - wintered colonies? (4) What effect do one or two year old queens have in their relationship to the factors studied? (5) Does spring strength of the colonies below or above average exert any great influence on production? (6) Could fall strength, considerably above the average, influence successful wintering in the cellar or outside and the subsequent amount of honey produced? (7) How weak can the colonies be in the fall for successful over-wintering? (8) What effect do package colonies exert as compared with previously over-wintered colonies? (9) Do divisions from over-wintered colonies or increases compare favorably with package colonies? (10) Does a history of previous over-wintering exert a greater influence on subsequent over-wintering than is generally supposed by beekeepers?

The table on next page summarizes some of the data for comparative purposes.

It should be stated previously to entering into any discussion on the above mentioned Table 1, that no divisions or increases from over-wintered colonies were made in the first five-year period (1935 to 1941 inclusive) while package colonies were used for comparative purposes and that no package colonies were established in the last five-year period (1942-46 inclusive) when divisions or increases from over-wintered colonies were made in volume and by different methods.

All Colonies

The winter mortality from 802 colonies, prepared for wintering under numerous different types of experiments, was approximately 15 percent for the ten-year period, which is not excessive considering the relatively high average strength of the living colonies. The average total loss in weight (42.6 lbs.) is slightly lower than would have been anticipated from a cursory examination of the annual average total loss data. The average crop yield (191.6 lbs.) is slightly higher than that usually obtained by commercial producers in this area or for the province as a whole.

Cellar vs. Outside-Wintered Groups

The difference of 126 colonies between the cellar and outside wintered-groups might be considered too large to warrant direct comparisons, but since similar groups were wintered each season the data could be taken as indicative of certain trends. The death rate of 16.9 and 13.4 percent for the cellar and outside-wintered groups respectively has been fairly consistent from year to year. The fact that the winter loss in

Table 1.—Summary of ten years' average results on winter loss in weight, spring strength, fall strength, and honey crop produced. (1935-46)

Grouping Arrangement	Total Colonies Wintered	Total Living in spring	Percentage of Mortality	Average Winter loss in wt.	Average Spring Strength in Frames Bees	Brood	Eggs	Average Fall Strength in Frames Bees	Brood	Eggs	Average Yield (lbs.)
All Colonies	802	679	15.4	42.6	7.7	1.0	1.5	43.0	4.3	3.5	191.6
25% with lowest loss	181	164	9.4	27.3	7.6	1.0	1.6	41.5	4.0	3.0	184.4
25-50% with lowest loss	241	228	5.4	38.0	7.9	1.0	1.6	42.3	4.2	3.7	187.2
50-75% with highest loss	231	201	13.0	47.2	7.9	1.1	1.6	43.8	4.0	3.4	199.8
75-100% with highest loss	149	86	42.3	61.0	7.3	.6	.8	43.8	4.5	3.5	197.2
Cellar-wintered colonies	464	386	16.9	43.8	7.2	.5	1.3	40.0	5.1	3.2	176.1
Outside-wintered colonies	338	293	13.4	40.9	9.3	1.6	1.8	50.5	4.5	3.4	212.3
Two-year-old queens	195	163	16.5	42.9	8.2	1.0	1.5	41.6	4.2	3.0	175.5
One-year-old queens	607	516	15.0	42.6	7.6	1.0	1.5	44.0	4.3	3.6	196.6
Less than 6 frs. with bees in spring	173			39.5	3.0	.5	.8	38.5	4.0	3.0	137.8
Six frames or more with bees in spring	506			43.8	10.3	1.2	1.8	45.1	4.4	3.6	209.9
55 or more frs. of bees in fall	144			42.7	9.0	1.2	1.8	60.0	5.0	4.0	279.8
55 or more frs. in cellar	45			47.5	7.5	.2	1.5	59.2	5.0	4.0	281.0
55 or more frs. outside	99			40.5	9.6	2.0	3.0	60.7	5.0	4.0	279.3
30 frs. of bees in fall	62			37.5	6.2	.5	1.2	31.0	3.5	2.5	125.9
30 frs. of bees in cellar	47			36.5	6.5	.5	1.5	30.0	4.0	2.5	125.9
30 frs. of bees outside	15			38.3	6.0	1.0	1.2	30.0	3.5	1.5	126.1
Package colonies	227	198	12.8	(Previous year's fall strength) 41.2	7.7	.1	1.6	32.6 40.5	4.3 4.2	2.5 3.3	126.0 181.3
All other colonies except packages	575	481	16.4	43.2	8.0	1.1	1.6	44.6	4.3	3.6	195.8
Increase colonies	112	78	30.4	(Previous year's fall strength) 48.7	6.8	.1	1.1	29.2 42.8	3.6 4.3	2.6 3.3	106.2 164.5
All other colonies excepting increase	690	601	12.9	41.7	7.9	1.1	1.6	43.5	4.3	3.5	195.1
All other colonies excepting packages and increase	463	403	13.0	41.8	8.3	1.0	1.7	45.0	4.3	3.6	201.9

weight in outside-wintered colonies was approximately 3 pounds less, on the average, than for cellar-wintered colonies, will no doubt be somewhat of a surprise to most beekeepers and even to some of our beekeeping authorities who have stressed the necessity for additional stores for outside-wintering. But even assuming that there was no significant difference in the loss in weight between the two groups, the average spring strength column shows that the cellar-wintered colonies had two frames less bees (7.2) as compared with the outside wintered group (9.3) at the first examination. The average fall strength, however, did not show the same ratio of difference on the basis of average spring strength, whereas the average crop yield shows a wide disparity and is not directly related to the average fall strengths. This disparity of relationship will be dealt with at a greater length in another paper.

Package Colonies

The previous average year's fall strength and average production for all two-pound package colonies for the five-year period 1935-1941 are shown to illustrate the comparison between previously over-wintered and increase colonies. The average fall strength and average production of this group was similar to the 30-frame or weak over-wintered colonies for the first season. The survival of package started colonies the following spring was 87.2 percent or very similar to the percentage loss

in the outside-wintered group. The winter loss in weight was slightly less than the average for all colonies, while the average spring strength was the same and the average production was approximately 10 pounds less than the average for all colonies.

Summary and Conclusions

Limiting ourselves entirely to the data and comparisons available in Table 1, we may generalize as follows:

(1) There was an approximate average of 15 percent mortality in colonies during the winter including several methods of packing, with an average loss in weight of 42.6 pounds, and average spring strength of 7.7 frames covered by bees, and an average production of 191.6 pounds of honey per colony. Evaluating honey at 15 cents per pound, deducting the winter loss in weight from the average production and then subtracting the average production of the package group, leaves a balance of $3.45 per colony to cover the cost of labor, packing material, and cost of queens for increases to make up the winter loss sustained.

(2) The winter loss in weight in the twenty five percent ranges show that 18.5 percent of the colonies require approximately 20 pounds of additional stores for successful wintering and that the highest mortality rate exists in the 75-100 percent grouping. It is fairly evident, however, that the winter loss in weight does not appreciably influence the spring strength of the surviving colonies, their subsequent build-up, or production.

(3) Outside - wintered colonies have a lower mortality rate and three pounds less loss in weight during the winter, two more frames covered by bees in the spring, and a higher production potential than cellar-wintered colonies.

(4) The age of the queen does not materially influence spring survival or loss in weight during the winter. The spring strength was slightly in favor of the two-year-old queen, but the subsequent crop production was in favor of the one-year-old queens.

(5) Strong over-wintered colonies require slightly more stores than weak colonies but their subsequent build-up and production was not in direct proportion to their spring strength relationship. This may possibly indicate a maximum colony population which may be correlated with the maximum production potential.

(6) Strong colonies in the fall have a higher loss in weight in the cellar than outside and also a lower spring strength. The lower spring strength of the cellar - wintered group did not influence the production potential which helps to substantiate the generalization made in section 5 above.

(7) Weak colonies in the fall have a slightly lower winter loss than strong colonies, but their subsequent spring strength and production is less than half that of the strong colonies, and equal to the first year production from package started colonies.

(8) Package started colonies were equal to previously over-wintered colonies in mortality rate and winter loss in weight, and directly comparable to cellar-wintered colonies in spring and fall strength, as well as honey production.

(9) Increase colonies were 20 pounds below package started colonies in production, had an excessive (30.4%) mortality rate, had one frame less of bees in the spring, were slightly stronger in the fall but produced about 17 pounds less than package started colonies.

(10) Previously over - wintered colonies, eliminating all package and increase colonies, have the highest survival rate, a very favorable spring and fall strength, as well as production average. Acclimatization cannot be assumed to be a factor because when package started colonies are added to this group the mortality rate remains the same. Age of queens should not be a factor because the queens in both package started and increase colonies were of similar age and produced in the same region by the same queen breeder.

It would appear from the data presented that fall strength of the colonies plus outside-wintering are the major factors to be considered by prairie beekeepers for the production of higher average yields.

(To be continued)

From the Field of Experience

Should We Face Hives South?

By Bruce L. Morehouse

Because we have many times asked ourselves the same question, we read with much interest your editorial on facing the hives to the south. Please permit us to comment on this matter from the point of view of western Minnesota beekeepers.

While we believe you must be right that there is an edge of advantage in facing hives to the south, there are what appeals to us as good and sufficient reasons for continuing to face our hives in each cardinal direction: north, east, south, and west.

For our cold winters (many days 30 below zero), we have found that outdoor packing in groups of eight lends itself well to our need. So, we carry this same group arrangement over into a year-round system. (Our system is described on page 585 in Gleanings for October, 1936.) Moreover, we find that the south and west facing colonies are those from which the bees fly out most in the winter, light on the snow, chill, and never get back. Here, in the summertime, during the June and July main flow, the north-facing colonies get more sunshine than those facing other directions. So, all in all, we prefer to forego the slight difference there may be in colony production by facing all colonies south, and stick to our groups of eight year-round system.

We wonder if a poll of other beekeepers from Canada to Texas might find a considerable variance in opinion on this matter, or if for other reasons they prefer to face hives in some particular direction.

Montevideo, Minnesota.

[We should be glad to hear from others on this matter.—Ed.]

Beekeeping in South Africa

By Louis Hardwick

Hon. Secretary, Western Province Beekeepers' Assn., and Editor, S. A. Bee Journal

Believing that an exchange of ideas in regard to beekeeping methods adopted in South Africa and the United States would be useful and at the same time interesting, prompts me to write a few notes for publication in your journal.

In the Union of South Africa, there are six beekeepers' associations and although we cannot boast

Tea and a chat on the lawn at a field meeting near Capetown, S. Africa, April 12, 1947

of so large a membership as in other lands, there is a very definite advancement in modern beekeeping and there is no reason to doubt that in a few years the industry will have appreciably developed.

On the many thousands of acres of uncultivated land we believe much can be done to propogate some suitable clover or other plants to arrest erosion and provide increased bee pasture.

One of our most popular methods of extending knowledge of apiculture is the holding of field meetings at which demonstrations are conducted. A successful meeting of this nature was recently held at an apiary some 30 miles from Cape Town, at which about 50 persons from the surrounding district were present.

A hive was opened and the rudimentary principles of handling bees were explained, followed by a talk on the preparation of honey for sale.

Swarm control was also dealt with and the screen board advocated by Snelgrove was exhibited and its practical use explained.

We are most fortunate in South Africa in so far as bee diseases are concerned. Some years ago a mild form of foulbrood was discovered but it was successfully treated with the result that it has not reappeared and we are practically free of all bee diseases.

About 40 years ago legislation was passed to prohibit the importation of honey and used bee appliances into South Africa. Wax can only be imported under special permit and the importation of bees is confined to the appropriate government department.

What Keeps the Smoker from Going Out?

By Charles J. Koover

Almost every month someone suggests in the bee journals some particular material that has the required qualities of a good smoker fuel and won't go out easily.

On that "won't go out" hinges an experiment. For years I have tried all sorts of fuels. What I wanted was a fuel that would stay lighted even when I set the smoker down for half an hour and would go right on puffing out quantities of dense, white, pleasant smelling smoke when I worked the bellows again.

I did find the smoker fuel which suits me best but it would not stay lighted. For one thing it packs closely and the fire smothers. Yet it has the advantage of being safe to have around without having to keep it in closed metal containers like greasy waste or rags. And its smoke smells like pine trees in the mountains on a hot summer day.

So I reasoned that if I could only get more oxygen to the fire grate when I wasn't working the bellows maybe my fuel would stay lighted. When I made a second grate of one eighth hardware cloth and kept it about an inch above the lower grate the problem was solved. I could start the smoker, fill it with fuel, and set it aside. It would take about an hour to burn itself out slowly.

But this second grate above the lower one cut down the quantity of fuel the smoker would hold and it was a makeshift contraption. So I tried my next experiment. Would the fuel stay lighted if I increased the number of holes in the original grate? With a hand drill I drilled twice as many more holes in the grate as it originally contained, and to my pleasant surprise it worked just as well.

If your smoker goes out unless you work the bellows every so often, pull out the grate and drill all the additional holes into it without having them come too close and run together. It won't increase the amount of air coming into the smokepot from the bellows as far as I have been able to determine but it seems to provide a freer circulation of air around the smoldering fuel when the bellows are not being worked.

And it works equally well with any kind of fuel. And by the way, if your fuel flames once in a while because of working the bellows too vigorously, the best way to stop that is to give the smoker a couple of hefty shakes.

Altadena, Calif.

Wintering in Two Colony Cases

By Bro. Emile

Bro. Emile's apiary has plenty of wind protection.

For three years I've been wintering my bees outdoors in two-hive cases as the photo indicates. I have not lost any colonies so far. Last autumn when I stored the bees I had strong colonies, and each of them had a young queen.

On my first visit in April I was astonished to perceive the weakness of the colonies on the right hand side and the sturdiness and strength of those on the opposite side.

My cases were built during the war when wood was very scarce. The lumber used was rough pine. Tar paper was put inside as a first layer of protection, then the brick imitation covering outside. In between the hive and the case I use straw as a packing. Furthermore, in winter, after each snowstorm, I covered the cases with snow except the foremost section.

Alfred, Maine.

[Stronger colonies on one side of each case than the other may have been due to bees drifting from one side to the other. This happens when hive entrances are too close together and face in the same direction.—Ed.]

Sweet Clover Weevil

By Mrs. H. J. Schaffer

While reading the bee journals the past few months we have not noticed any articles on the clover weevil that seems to have infested the white sweet clover in this section of the country. We have checked from Nebraska north to Nevada, Mo., south, and from Topeka, Kans., to Booneville, Mo., east and west, and find one or more weevils in practically every stalk of white sweet clover. We found that around Topeka and possibly farther west the clover weevil was not quite so damaging.

[We shall be interested in further reports from over the country on the weevil situation.—Ed.]

New Jersey's Largest Field Meeting

By E. G. Carr

The largest field meeting of the New Jersey Beekeepers' Association in the 45 years of its history was held on the grounds of the New Jersey Agricultural Experiment Station at New Brunswick, N. J., on July 19, 1947.

Dr. William Martin, Dean of the Station, welcomed the group and spoke of the varied activities of the Station. Among these were the testing of weed killers, fog treating of oats, work with Newcastle disease of poultry which threatened to ruin that industry, as well as many other lines. New problems affecting agriculture constantly arise, said Mr. Martin, which must be solved to prevent great loss to crops.

Prof. Farley, fruit specialist, spoke of the necessity of organizations such as the "fruit council" which have been instrumental in the State in the propogation and dissemination of better varieties of fruits. He said fruit growers realize more and more their need for bees as pollinators. The Hale peach, said Mr. Farley, particularly needs pollinators. With bees this variety gives a good crop—no bees, 40 percent of a crop.

The fruit grower, said Farley, needs information regarding bees, and suggested the advisability of joint meetings of fruit growers and beekeepers where the problems of each could be discussed and helpful conclusions reached.

Dr. B. B. Pepper, state entomologist, said there is nothing less than a revolution in the insecticide business developing insecticides new and more powerful. He is trying to keep a balance between harmful insects and bees. There is a demand, said Dr. Pepper, for better insect control and he is trying to evaluate the different insect control problems with the protection of bees always in mind.

Dr. Charles Conners, ornamental horticulturalist, spoke of the many lines of work with ornamental plants. He dwelt at some length on his work with holly. The reason for this is the dollar and cents possibilities of growing holly for decorative purposes.

Holly, it seems, varies greatly in the desirability of the foilage appearance and its fruiting habit. The fact that there are male and female plants adds another problem to the work where honeybees play a part.

While all discussions were not directly beekeepers' problems it was interesting to find honeybees considered by each speaker as of importance in his work.

There were 170 in attendance, about 40 of whom are not in the photo.

Pennington, N. J.

Bees Clean Cut Comb Honey

By Anonymous

Individual portions of cut comb honey made great headway for a while, but later on much of it was returned as unsatisfactory.

The dissatisfaction was caused by granulation from the cut edges spreading into the small individual portion.

This need not happen if the cut chunks of honey are given back to the bees to clean up.

Instead of allowing the chunks to drain for 24 hours place them on a wire screen over a strong colony and the bees will clean them in an hour or two—but do not leave them there too long.

The trouble with this method is that the cut cells when cleaned out leave a ragged edge which does not look nice, but which might be hidden by the use of a dainty carton.

To design such a carton is your problem. I leave it to you!

Second Glances

By C. M. Isaacson

Packing is well worth trying. Chas. Mraz makes this statement out of a pretty extensive experience. His article is unusually well illustrated and the text states plainly the whys and hows of packing. The metal case he describes surely would make for ease (and speed) of packing. But altho his figure of more than 50c per colony is in agreement with that given by some others, I still question whether it is not possible to reduce that considerably. Counting labor and materials, I know it is possible here to do it for 25c and certainly for 30c. This is with a straw-tarpaper wrap (page 577).

Good colonies remaining, rather than merely the amount left numerically, should be the measure of successful wintering, says Editor Root (page 583). He is certainly right. And in many localities, packing would undoubtedly not be as profitable as in others. I might mention, though, that in our region of Northern Minnesota, commercial beekeepers are swinging back to **moderate** packing beneath a tarpaper wrap, **after a trial** of wrapping alone. And could it not be that the comparative losses of A. I. Root and the man he purchased bees from (page 595) were not only due to the **hives,** but also to **what** was wintered. Let-alone bees (such as would be largely the case in box hives) would have stores **positioned** correctly and compactly (this is important), young queens and bees, etc. They would stand a great deal of winter.

Surplus royal jelly is the answer to the question of queen introduction, as well as explaining swarming and supersedure, says A. M. Southwick (page 584), and he makes his theory sound plausible. But one flaw in his words on mailing cage queen introduction (he states that they must be fed royal jelly several days before she can accept enough to be released from the cage) is that many, many times during the season I release mailing cage queens directly and immediately among the bees. Colony condition and **desire** for a queen—together with lack of fear on her part—play a big part, I know.

Drifting may be serious under certain conditions (page 595). Many beekeepers do not realize just how much of this occurs, but I believe Mr. Jamieson is correct in stating that it is a big factor in variation in colony yield. And note that one sentence — that the colony on the **west** side of a wintered-over pair will have the most bees. Drifting is usually **against** the wind.

Keep stores above the cluster (page 591). As usual, Propolis Pete puts much common sense into his article. Bees rarely freeze to death, as he says, but all too often they do starve. And other advice worth noticing for a second glance—that each beekeeper must use his own judgment, based on locality and his own conditions—that is, beyond the basic things that must always be present for good wintering.

Retarding of spore germination may be the answer to the why of sulfa's effectiveness (page 593). Because the honeybee larvae is susceptible for only a relatively short period, this could account for the first clean-up. But why do successive generations of brood remain clean (**if** they do)?

"Millions at our house" May I repeat this old saying once again in comment upon Editor Deyell's good advice to leave a superabundance of stores? It does pay—the bees need to feel "rich" to make us rich! (Both a smile and seriousness in my statement here—a good crop makes us feel wealthy even if our income tax isn't too unwieldy).

Allen Latham's alcohol-sulfathiazole treatment for AFB is gaining in popularity and it has both advantages and drawbacks. It is well worth a trial though. Read both the editorial comment (page 608) and the item on page 620.

Honey prices have steadied a bit. Honey is getting increasing publicity nationally in magazines, newspapers, and radio—due not in the least part to the work of the American Honey Institute. Is there not some correlation in these two facts? As the News Notes say, let's be doers, not merely wishers. **We need to support the Institute.**

Thief River Falls, Minnesota.

Annotations

By Prof. A. Z. Abushady
United Nations, New York

Hive and Queen Scent. — Mr Southwick supports (p. 584) Mr. Allen Latham's contention that it is the action of the queen, and not her supposed individual scent or that of her hive, which decides the action of the bees towards her. If a strange queen acts "as if at home" the bees will readily accept her, we are told. It needs the experience with varieties and strains of bees, particularly African and Oriental, to make one hesitate in accepting this proposition as it stands. I have found African and Oriental bees, notwithstanding the excellent behavior of European queens directly introduced to them, anxious to ball them and would do so if not prevented.

Surplus Royal Food.—Mr. Southwick believes that the most important factor in the acceptance of a new queen is the immediate and unlimited acceptance of royal jelly from the workers by the queen. A queen which will not relieve the secreting workers when the royal jelly supply is overabundant is immediately unsatisfactory to them, according to his contention. Yet I have seen both newly introduced queens and well established prolific queens that readily responded to the invitations of the secreting workers, finally superseded. And thus a combination of more than one factor seems to affect the acceptance or maintenance of a queen. These factors are conjectured, and we do not seem to have a definite scientific proof based on adequate investigation.

Curing Robbing. — The method advocated by a commercial beekeeper (p. 609) of curing robbing in the yard, if it gets well started, by removing the covers from all hives, leaving them open for a time, sounds theoretically reasonable. But my experience in out-apiaries during extracting time, when done there and then without previously using the bee escape, does not always support this practice. There will always be, in any apiary, colonies weaker than others and they, or a number of them, are bound to become victims of such liberty in management.

Three Essentials for Success. — These receive an editorial from the A.B.J. for October (p. 467). They are very simple, yet they are very fundamental and merit the fullest emphasis. Briefly stated, they are: (1) Giving ample room to the bees, (2) good combs, and (3) plenty of reserve stores. The Editor acknowledges "that there are other things which are important, but the man who makes sure that there is no neglect of these three is likely to be regarded as a successful beekeeper". He also emphasizes that "the less the bees are disturbed the better for them". Paraphrasing this rational reminder, I would say that the successful beekeeper is one possessing besides good hives, good bees, and adequate stores, the fortunate aptitude of saving his time and his bees by methodical management based on his full understanding of his colonies in relation to their locality and the seasons.

Queen Losses.—In the same journal (p. 467) note is made of the fact that this has been a season of disastrous queen failure, of many supersedures following the cold and backward spring — a serious condition which has cost the beekeepers a substantial portion of the possible 1947 harvest. To my mind, this is a typical example of the bees' reaction to unfavorable conditions by unjustly superseding the queen — the life center of the colony.

OUR COVER PICTURE

Feeding time. Since honey is off the ration list there should be no excuse for neglecting feeding.—Clarence Tontz, Elsinore, Calif.

Asked and Answered

Moving Bees into a Cellar

Question:—I will have to move my bees from my present place where I have been wintering them in my basement to another basement one half mile away. Is it all right to let them remain here until it is time to cellar them, then move the bees from their summer stands into the new basement where they are to stay until spring, or should they be moved there first to have a flight before cellaring them? Some years ago a beekeeper told me that he hauled most of his bees to a cellar and set them outside for a flight. Some were carried into the cellar right away. He told me that all those that were carried in wintered better than those that had had a flight.—Fred A. Krause, Wis.

Answer:—Our suggestion is that you move your bees to some spot near the entrance of the cellar which you intend to use for your bees. This moving should be done rather late, a short time before they are put into the cellar, but early enough for the bees to have a good flight before being put into the cellar. We hardly think the bees will return to the old location. In case some of the old bees should return they are likely to fly around the old location a few times, but not finding any hives to enter, they will return to the new location. In our opinion it is preferable to carry bees carefully into a cellar following a good flight, rather than haul them from an out-apiary just before they are put into the cellar. Some years ago we weighed hives that were set outside the cellar before being put into it, then weighed an equal number of hives than were hauled from an out-yard and carried into the cellar. Colonies carefully carried into the cellar consumed less stores and wintered better than colonies hauled from an out-yard and put immediately into the cellar.

Using Shallow Supers Over Jumbo Hives

Question:—Ordinarily it would be wise to use regular Langstroth supers over the same brood chambers. But since I will be using Jumbo hives, don't you think that I will be better equipped by using shallow frame supers for the surplus honey, using eight or nine frames to the super—thereby making the supers easier to lift and the shallow frames easier to uncap?—Philip Heggen, Wash.

Answer:—You would seem to be justified in using shallow extracting supers on your Jumbo brood chambers. As you may know, a regular shallow super is exactly one half the depth of a Jumbo hive. If ever you wanted to convert two shallow supers into a Jumbo brood chamber you can simply staple two shallow supers together. These shallow supers are quite easy to handle and as mentioned in your letter, the combs are easy to uncap. You could, if you wish, winter each colony in a Jumbo brood chamber with the shallow super used as a food chamber. Possibly this is what you have in mind.

Amount of Surplus Honey From One Colony

Question:—What is the most honey made from one hive of bees in one season?—O. V. McDow, Okla.

Answer:—One of the best yields of honey from one colony was over 700 pounds in one season, from a colony in Michigan in 1936. In one day during July this colony brought in 36 pounds. Some years ago we heard of a colony in the West storing over 1000 pounds in one season. Such records are of course unusual.

Getting Rid of Wax Moths

Question:—Can you furnish me with information on how to destroy the wax moth when it is in the egg stage? I have some comb honey infected with it.—Karl Kistler, Ohio.

Answer:—In order to prevent all trouble from the wax moths in hives occupied by bees, it is only necessary to keep strong colonies in modern hives, and supplied with good Italian queens. All supers of combs stored in the honey house should be piled and covered carefully so that no moth may gain access. However, if the combs contain eggs from the wax moth when taken from the hive, the wax worms will develop later on. If moths should appear in stored material, and yet the combs are not badly affected, they may be given to strong Italian colonies to clean up. If the condition is more serious, the combs will need to be fumigated. In this case, place at the top of the pile in an empty super a pan containing carbon bisulphide and leave tightly covered until the next day. The fumes, when mixed with air, are highly inflammable, and fumigation should therefore be done outdoors away from buildings. At 70 degrees Fahrenheit, 10 cubic feet of space requires about two ounces of carbon bisul-

phide for complete saturation. This kills everything except eggs. In about 12 days, when the eggs hatch, another fumigation will be necessary. In estimating the amount of bisulphide needed, it should be remembered that the empty combs occupy a part of the super space and, if filled with honey, they probably take up as much as two thirds of the space.

Moving Bees a Short Distance

Question: — I must move 25 hives of bees 1½ miles just after the finish of the honey flow. What can I do to cause the bees to mark the new place so they won't go back to the old location?—L. N. Steele, No. Car.

Answer:—It is not likely that the old bees would return to the original location after the hives are moved. However, we suggest that you place some brush or coarse weeds in front of the hive entrances after you have moved the hives so that when the bees leave the hives for the first time they will notice the unusual obstructions at the hive entrances and thus re-orient themselves on the new location. These temporary obstructions at the hive entrances should, of course, be removed after the bees have accustomed themselves to the new location.

Contents of Three-Pound Jar

Question:—What is the correct weight to place on a quart size jar of honey?—C. L. Perdue, Ga.

Answer: — It is possible to get three pounds of cold thick honey into a quart jar. However, if the honey is inclined to be thin and warm, a quart jar may not hold three pounds. It would be advisable to mark the label of a quart jar to contain 2 pounds and 14 ounces of honey.

What to Do with a Lazy Colony

Question:—I have two strong colonies of bees. A and B. A is very lazy. It lives from year to year and seems satisfied and happy. B is a worker with three full supers. My question is: Shall I destroy A? Get a queen and divide B? Let a part stay with the old queen and part with the adopted queen?—C. R. Stone, Ohio.

Answer:—Your two colonies of bees, one lazy and the other industrious, may be similar to some human beings. There are those who are industrious and actually accomplish something in this world and there are others who are satisfied to sit around and do practically nothing. Some years ago when the writer kept bees commercially in northern Michigan, it so happened that the best and the worst colonies were located side by side in the same apiary. The best colony had five deep supers filled with honey and the worst colony did not fill one super. We suggest that you check the brood chamber in your indolent colony carefully to see whether or not the hive is equipped with good combs, consisting of worker cells, that are suitable for the queen to occupy in brood rearing. Sometimes a queen is blamed for the condition of the colony when, as a matter of fact, she does not have an opportunity to do her best work because of poor combs, consisting mainly of stretched or drone cells. If the combs are reasonably good and consist mainly of worker cells, and if the colony has a reasonable amount of stores, it would seem that the queen is at fault. She should be removed and replaced with a young laying queen of a known honey gathering strain. If your poor colony is reasonably populous in bees, it is not too late (September 22) to get another queen introduced. If the colony is rather weak in bees it wouldn't pay to attempt an introduction of a queen but, rather, wait until next spring and if the colony lives through, remove the queen and add a package of bees with a good queen.

Booster Packages

Question. — Would it be advisable or profitable to order package bees to give light swarms an extra pick-up?—H. O. Swartz, Mich.

Answer.—Some beekeepers who install packages in the spring plan to have queenless packages follow about two weeks after the first packages are installed. These queenless packages are united with the bees already installed with the idea of giving the colonies a boost at a time when help is needed. Some give each package of bees a comb of sealed brood, preferably a comb from which young bees are beginning to emerge. This comb should be put in the center of the hive. Of course, this can be done only when the beekeeper has wintered over colonies from which to take the brood.

A Talk to Beekeepers

By M. J. Deyell

Apiary Narrowly Escapes Twister

If those of you who have back issues of Gleanings will turn to page 361 of the June, 1943, issue, you will find an account of how a tornado flattened 45 hives in one of my apiaries in April, 1943. Fortunately, no great amount of damage was done.

On September 1 this year, a twister struck near Medina at night, doing considerable damage. A small apiary of mine a few miles west of here is located in an orchard near a ravine. Two large barns a few rods from the apiary, as well as some trees in the west end of the orchard, were leveled to the ground but not a hive was damaged. I told someone that my apiary must have a guardian angel.

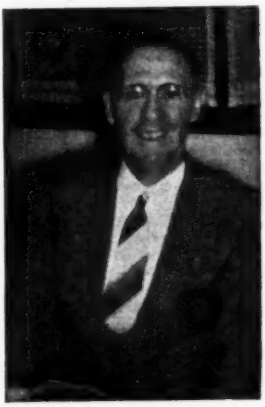
The Dog Was Not so Lucky

A dog belonging on a near-by farm was missing the morning following the storm. During the day a neighbor about a half mile away called up to say that a strange dog was wandering around his yard. The man who lost the dog went over and found his dog in such a dazed condition that it did not immediately recognize its owner. No wonder, after sailing through the air such a great distance. Tornadoes play peculiar pranks at times.

Beekeepers having out-apiaries should be prepared, as much as possible, against **wind, fire, and floods.** There is nothing much we can do about the first unless we tie or chain each hive solidly to some kind of anchor, and that would hardly be feasible. However, we can guard against fires and floods damaging our hives if we use ordinary precaution and good judgment in selecting suitable apiary sites.

Young Queen Stings Mother to Death

Just today Walter Thomas, who is now managing our apiaries, came to me with an interesting story. While he was checking through a colony, two queens, apparently mother and daughter, were found near to one another on a comb of brood. The older queen had apparently almost reached the end of her usefulness. As he watched the queens the younger one rushed up



M. J. Deyell

to the older one and stung her to death.

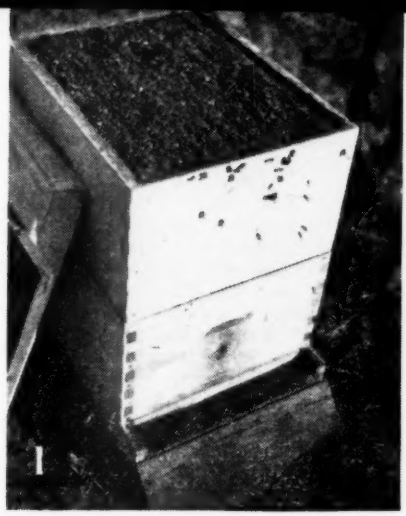
It is barely possible that the queen that did the stinging may not have been the daughter of the queen that was stung, but rather a queen from another hive that in some way gained entrance to this hive. However, it is natural to assume that the younger queen was the daughter of the older queen. It is possible that this younger queen became somewhat excited during the manipulation of the hive and suddenly decided to sting the other queen.

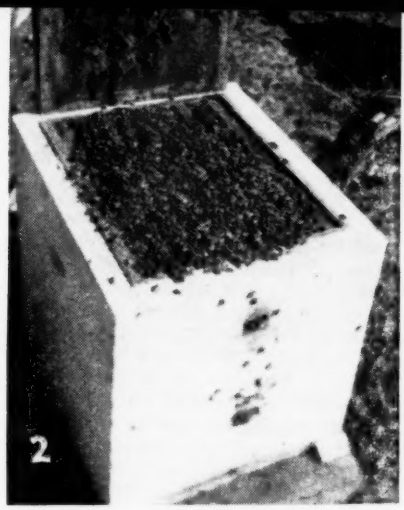
We have wondered what percentage of old queens are disposed of in the process of supersedure, either by worker bees or the younger queen, before they actually die, and we have wondered also what percentage of old queens tolerated in the hives do actually die a natural death. Possibly being stung to death by the younger queens is a natural death for old queens. Some of our readers may be able to throw some light on this question.

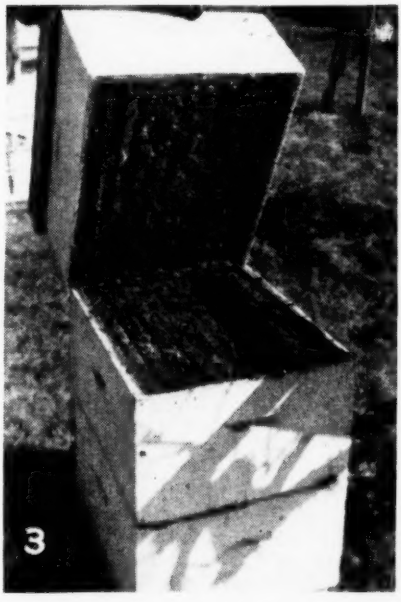
Most of you beginners know, or should know, that the sting of a queen bee has no barbs as has the sting of a worker bee. This makes it possible for a queen to sting a rival without actually losing her sting. In other words, she can sting more than once, as is the case with the bumblebee and wasp.

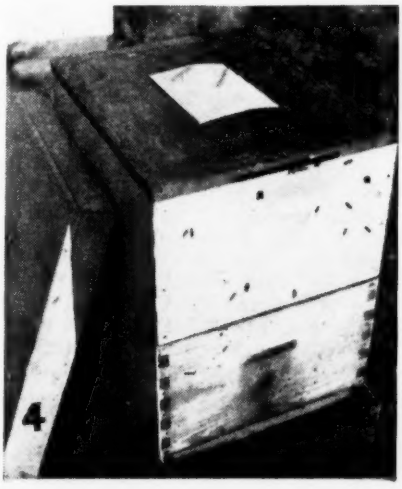
Honey Flow Still on Around Medina

Today is October 16. Our scale hive has gained 20 pounds in 15









No. 1—A two - story colony boiling over with bees.
No. 2—Another strong colony in a packed hive.
No. 3—A three-story colony.
No. 4—Hive with upper entrance made by cutting slot in inner cover, which is inverted. Outer cover is pushed forward to permit bees to leave and enter hive.

days. This is somewhat unusual, although a few years ago we had some colonies put up 75 pounds of surplus honey after October 2. The source of honey is white aster.

Seasons Appear to be Changing

Just yesterday I was looking over some old records of apiary work in 1922. During the fall of 1922 (before we started using the food chamber hive), we fed two thousand 10-pound pails of thick sugar syrup. Feeding was begun the first week in October and was completed by November 1. We did not begin feeding until practically all the brood had emerged. At present some colonies in this area have brood in from four to six combs. Yesterday a colony was found with brood in seven combs.

Bees Pack Brood Chambers with Honey

One advantage of a late flow is that bees are likely to store an ample amount of honey for winter food in double brood chamber hives. In most cases the upper brood chamber, quite often called the food chamber, is completely filled in addition to some honey in the lower chamber. We like to see this condition, because colonies thus well supplied are not likely to run out of food next spring.

XUM

One possible disadvantage of an aster flow is that if it is followed by cold weather that will not permit the bees to drive the excess moisture from the nectar, colonies may go into winter quarters with unripened stores which will probably cause dysentery, especially if there are long protracted spells of cold weather during the winter. However, if the late aster flow is followed by a spell of warm weather that permits bees to properly cure the late honey, all well and good.

Estimating Amount of Stores

It is a comparatively simple matter to estimate the amount of honey in each hive of bees that goes into winter quarters. It is better to estimate rather than guess at the amount. For the beginner who has only a few hives of bees, it doesn't take long to check through each colony. A standard comb fairly well filled contains approximately five pounds of honey. A deep brood chamber, sometimes called the upper brood chamber in two-story wintering, when well filled should contain about 50 pounds of honey. If there is some honey in the lower chamber, all the better. I have some colonies this fall that have the upper chamber jammed full and the lower chamber about half full. If these colonies do not need all of this honey before the beginning of the clover flow next June, there is no harm done. If I should wish to divide one of these colonies in the spring during the fruit bloom honey flow, giving the queenless portion a young laying queen, there would be some honey for both divisions unless perchance we should have another cold spring as we had this year, when bees were not able to fly out after nectar and pollen. In any event I would prefer to have colonies with an extra amount of honey rather than not enough. As stated in the October talk, this honey is never lost. It is like money in the bank at compound interest.

Dr. C. L. Farrar, head of Bee Culture Laboratory at Madison, Wisconsin, in operating two-queen colonies, does away with the older of the two queens during the fall months, then winters each large colony in a three-story hive. Such colonies are not likely to die during the winter, provided of course they have an ample amount of stores. Furthermore, they are monstrous colonies in the spring, ready to take advantage of all honey flows that occur during the season. We have tried three-story wintering. If some of you who have not tried it will give it a try, you may be amazed at the unusually large colonies you will have in the spring. I would prefer to have a moderate number of populous colonies in the spring rather than a large number of mediocre colonies.

Mistaking Honey for Pollen

When estimating the amount of honey in each comb, it is easy at times to mistake pollen for honey. As you may have observed, bees will half-fill cells with pollen, then, if more honey is stored later, place this honey on top of the pollen. To detect pollen in a comb, hold the comb up between you and the sun, enabling you to see portions of the comb which are not clear. Take a match and dig through the capping and you will likely find pollen underneath the honey. Authorities say that for large colonies there should be the equivalent of five or six solid combs of pollen. This being the case, it is obvious that a two-story ten-frame standard hive is none too large for wintering a populous colony of bees.

The Period of Quiescence

In most of the North, colonies of bees are rather quiet during November and December. The bees eat only enough to keep alive and they appear to rest much of the time as they cluster rather loosely on the combs. When the temperature surrounding the bees reaches 57° Fahrenheit, they will start to form a cluster. As the temperature in the hive gets colder, the cluster will form more tightly.

During the cold winter months, the cluster will contract still more and the bees on the outside of the cluster, with their heads pointed to the center, form what is called a rim or periphery, about 2½ or 3 inches in diameter. The bees near the center of the cluster are moving about and are not clustered tightly. The rim of bees with their bodies packed tightly together prevents some of the heat generated by muscular activity of the bees in the center of the cluster from escaping. The temperature in the center of the

(Continued on page 692)

80 Years Among the Bees

By E. R. Root

How Much and What Kind of Food While in Winter Quarters

In a series of articles under this general head we have tried to show how A. I. Root broke the record away back in 1873, producing a barrel of honey from a single colony, and 6000 pounds from 48 colonies, but not until after he had made many expensive mistakes. These mistakes enabled him to tell the beekeeping world how to succeed in bee culture. In other words, he taught more by telling what not to do than from telling of his successes.

In the last two or three issues we have shown how it was possible to overdo a good thing. Packing and insulation is helpful and useful when kept dry, but when it is allowed to get wet and freeze, it obviously does more harm than good. As we have shown, good and bad wintering is not based on the number of colonies that are alive in the spring but rather on the number able to produce a surplus of honey. Colonies below normal are generally a liability because they cannot possibly build up early enough in the spring to produce a crop. The only remedy is to unite or buy package bees, and this cost may more than offset the gain. Good wintering depends not so much upon the amount of packing as upon how numerically strong the bees are. There should be enough bees in the hive to fill a two-story hive in early fall. Such a force of bees will give out a large amount of moisture and unless it can escape, disaster will follow.

Winter Food

While bees will winter well on sugar syrup or good honey if well sealed in the combs, they may die if the food is unripe, partially soured, or because it contains too much honeydew. Usually any honey, if well sealed and given early enough in sufficient quantity, will bring the bees through safely, provided other factors are the same. Often insulation is not a necessary factor.

A. I. Root tried out Coffee A sugar which is nearly equivalent to what we call granulated sugar. He tried brown sugar with no apparent benefit. He believed it was not equal to white sugar and he was right. He tried out grape sugar, now known as dextrose or corn sugar. The bees would take it down readily from outdoor feeders which he supplied in the fall, but greatly to his chagrin he found this to be an imperfect food. It dried solid in the combs and the bees died on it.

He found in some cases that unripe aster honey was partly the cause of the bees dying. They developed dysentery and he rightly concluded that this form of food during winter was not a safe one. If it is thoroughly ripened and sealed it would probably be perfectly safe.

He tried out various forms of molasses, especially that known as New Orleans molasses, but the bees died on it and he did not know why. We now know it was due to the presence of dextrine which, when eaten on pancakes for breakfast is not harmful to humans, but is almost poison to bees when given as a winter food.

During his early days he came to the conclusion that 20 lbs. of sugar syrup in a hive was sufficient to bring the bees through the season but we did not know then that the syrup lacked a number of important elements found in honey, under the general term of minerals. Sugar syrup did not contain pollen, the presence of which he then thought caused dysentery. A. I. was not alone in believing that heresy. Now it is believed a strong colony that will fill two stories with from 40 to 50 lbs. of sealed honey is proof against dysentery.

The Modern Way of Feeding Bees

The man who introduced this idea was George S. Demuth, then on the staff of the U. S. Bureau of Entomology, and later Editor of Gleanings. During the First World War and following it, on his trip through California as a Government representative, Mr. Demuth emphasized the great importance of keeping the colonies in two stories, not only during the breeding season, but during the winter—the entire year, in fact. By introducing a young queen, brood rearing would begin shortly

(Continued on page 700)

Editorials

Gleanings Policy

On questions affecting the advancement of beekeeping, Gleanings tries to give full publicity without necessarily sharing the opinions of writers. Responsibility can not be assumed by this journal for all signed or quoted contributions.

Lowering Prices May Not Move Honey

Reports from over the country indicate that honey prices are dropping somewhat. Some have said that reducing the price does not seem to result in more honey sales.

We are reminded of a merchant in a near-by town who put on a special sale of a certain commodity. He made a window display offering the goods at an unusually low price. Sales were very slow—in fact, the special sale was not successful. The merchant removed the display in a short time, then put on another sale of the same article a week later, making a substantial increase in the price. Strange as it may seem the goods moved briskly.

The experience of this merchant seems to bear out the truth contained in the title of this editorial. What actually sells any product is a basic demand for it, the proper kind of publicity and advertising, and the maintenance of quality and service.

When there is a brisk demand for honey, it will sell even though the price seems rather high. When people actually want honey, they are going to have it regardless of price, except possibly in some instances where prices are actually out of line.

We must not overlook the tremendous amount of national publicity given honey each week and month by the **American Honey Institute** at Madison, Wisconsin. If it were not for the **Institute**, honey would not be enjoying the popularity it has today. Let's continue to give the **American Honey Institute** our moral and financial support in order that honey may continue to move at prices that will give beekeepers a reasonable margin of profit.

October 1947 Honey Report

According to the report dated October 8, 1947, put out by the Bureau of Agricultural Economics, Washington, D. C., the estimated honey crop is 210,039,000 pounds—2 percent below last year and 10 percent below 1945 production. This makes an average per-colony production of 35.4 pounds, the lowest since 1939.

Honey stocks on hand during mid-September were estimated at 80,550,000 pounds as compared with approximately half that amount a year earlier. The availability of sugar apparently has weakened the honey price structure.

The estimated number of colonies of bees in the U.S.A. is 5,910,000 as compared with 5,787,00 colonies in 1946.

Wild Aster

There are various kinds of asters which have a wide distribution over the country. There are said to be at least 125 varieties found in the United States.

In this section of Ohio we have a number of varieties including the small white aster and the purple stemmed aster. The bees appear to prefer the small white aster. We find that the white aster yields nectar better after a light frost, especially if there is considerable moisture in the soil.

During some seasons, especially when goldenrod fails, aster is a lifesaver. Thus far during October (this is October 14) our scale hive has gained over 16 pounds.

Some say that aster honey is not good for wintering bees. We have found that if bees have a chance to ripen the honey, following a late flow, it is suitable for winter stores. But if there should be a rapid flow from aster, followed by weather too cool to permit bees to drive off the excess moisture, such a situation may result in dysentery during the winter if there are long spells of cold weather.

Aster, the last source of honey of the season in most northern regions, is a valuable source of nectar for beekeepers, especially in the eastern states.

Queen Introduction Much has been written on this subject and much more is likely to be written. If we will stop to take a common sense view of the matter we will realize that problems connected with this phase of beekeeping boil down to a few comparatively simple rules.

We in this locality have found it difficult to get queens introduced to populous colonies early in the season, unless, perchance, there happens to be a heavy honey flow on. Obviously then, it is easier to get queens introduced during a honey flow than during a dearth of nectar.

There are various methods of introducing queens. The most common method is that of introducing a queen in the mailing and introducing cage in which the queen is shipped. Generally speaking, this method works out to good advantage, especially when there is a flow on and when the bees are not permitted to release the queen too soon after she is put into the queenless colony. The bees in the colony should have a little time—possibly two or three days—in which to get acquainted with the new queen and feed her through the wire screen of the cage. When she is well fed and her ovaries are enlarged in readiness for egg laying, she is likely to be accepted on being released from the cage.

We have had very good success this year in introducing young laying queens taken from nuclei in the same yard, each queen between two combs of brood placed in the center of the queenless colony after two combs are removed to make room for the two combs that accompany the new queen. All queens thus introduced have been accepted.

The Southern Hurricane Not until just recently have we had any specific reports concerning damage done to bees by the hurricane that struck through southern Florida and Louisiana. We know of one beekeeper in Louisiana who lost over 200 hives of bees because of wind and flood. We hope to have some pictures of the damaged apiaries in the next issue of our journal. We hope that the storm did not wreck the apiaries of southern bee and queen shippers. If it did, the supply of bees and queens will be reduced somewhat for the coming spring. We do need queens and packages each spring in the North to make up winter losses and to start new colonies.

Commercial beekeepers in the North occasionally experience losses of bees because of windstorms. However, the damage done in the North is usually restricted to a comparatively small area, whereas a hurricane is likely to cause damage over a wide area. We sincerely hope that the recent southern hurricane did not cause widespread damage to beekeepers.

Winter Losses of Bees Beekeepers of the North will be interested in the article covering this subject, beginning on page 656 of this issue.

While we did not have space for the entire article, the summary and conclusions are the important part.

It will be noticed that the average yield of cellar-wintered colonies for the ten-year period was 176.1 pounds as compared with 212.3 pounds for the outside-wintered colonies—a difference of 36.2 pounds in favor of outside wintering. This is in line with observations made by beekeepers during the years.

It is interesting to note also that the mortality of colonies wintered in cellars was 3 percent greater than the outside bees. The average winter loss in weight was about three pounds more for cellar-wintered colonies than for outside colonies. This is somewhat surprising, in view of experiments conducted here at Medina some years ago, when we found that outdoor-wintered bees lost considerably more weight during the winter than cellar-wintered bees.

However, as was brought out in the article, the outside - wintered bees had more brood in the spring than the cellar-wintered bees and stored more surplus honey.

The workers at the Dominion Experimental Farm at Brandon, Manitoba, are to be commended on the vast amount of experimental work carried on during the years.

Easier Said Than Done Beekeepers in different regions should look ahead or anticipate minor and major flows in order to have colonies up to proper peak of strength to take full advantage of them.

In this locality the past season was different from any preceding season that we can remember. We anticipated a good early flow from fruit bloom and dandelion. This flow did not materialize because of extremely erratic weather.

We counted on a honey flow from the clovers because the plants appeared to be in normal condition. Unusual weather conditions interfered with normal nectar secretion during the time clovers ordinarily secrete well. Our bees did get surplus from basswood. During August when there is usually a dearth of nectar in this locality, bees stored some surplus which may have come from red clover and smartweed. The honey is of a light amber color.

Goldenrod appeared to be in excellent condition and we were all set for a crop. For some reason unknown to the writer, this plant failed to yield normally in this locality, although the bees did get some nectar from this source.

This is October 13. Bees have been storing some surplus from late aster. Whether or not they will continue getting honey from this source remains to be seen.

And so the only solution we know of to meet such unpredictable situations related to honey flows is to make an honest effort to have colonies in good condition throughout the season. Theoretically, that is what should be done but in practice achieving this goal presents some difficulties. If only beekeepers could order and obtain certain types of weather and rainfall throughout the year, some of the problems that face our industry might be solved.

Importance of Well Filled Food Chambers

It seems probable that more bees are lost each season because of shortage of food than from any other single cause, including bee and brood diseases.

A swarm of bees in one of its natural habitats, a hollow tree, is likely to have an adequate amount of honey and pollen during the winter months when nectar and pollen are not available in the fields. Bees in their natural habitats are not tampered with by man, at least until they are discovered and transferred into modern movable frame hives.

It has been said, and truly, that man is the honeybee's worst enemy. Oftentimes the manipulation of hives is faulty. Combs of honey and pollen are removed from colonies, or changed about in hives in such a manner that bees are confused and their work disrupted. This faulty hive manipulation quite often results in the loss of perfectly good colonies.

It seems unwise to over-manipulate brood and food chambers during the fall months. At least a colony of bees knows, perhaps better than the owner, what is needed for the future in the way of honey and pollen properly placed in the brood nest.

If only beekeepers would leave an adequate amount of food for each colony for winter and early spring, and quit tampering too much with colonies late in the season, the percentage of winter loss would be much less than at present.

Obviously the combs in the food chamber should be well filled. When the colony is wintered in a two-story or food chamber hive there should also be some honey in the combs of the lower chamber. The colony will then form a winter cluster, with the middle or center of the cluster between the two sets of combs. This enables the bees to move laterally or sidewise if necessary between the two sets of frames.

As the honey is consumed by the bees, the cluster moves upward slowly. If the combs in the food chamber are well filled, the cluster of bees is not likely to run out of food before spring, even though there are protracted spells of cold weather during the winter.

As mentioned in the October issue of Gleanings, what may seem to be an over-supply of honey for each colony is never wasted. The bees then have this ample amount of food in the spring. A colony with a good queen and good combs well supplied with food—honey and pollen—will forge ahead rapidly in the spring and build up to maximum strength in time to take advantage of the first and succeeding honey flows during the season.

Not until beekeepers have learned by experience or otherwise, the utmost importance of ample food for colonies of bees, will the maximum crops of honey be secured.

From North, East, West, and South

SOUTHERN CALIFORNIA, Oct. 3

Weather: Today finds southern California basking in sunshine. No rain of any consequence has fallen since our last letter. One or two thunder showers of a fraction of an inch of rain and covering a few square miles have fallen. Nights are cool but the days are warm enough.

Market: There seems to be a demand for honey at a price around 15 cents.

Miscellaneous: Some few fires occurred on the bee ranges. The greatest of caution is being exercised and with our rainy season soon approaching there is little to fear from that source—and a rainy season we certainly hope it will be. To say things are dry is putting it mildly. Reservoirs and streams are well near an all time low. Every effort is being put forth to conserve or find new sources of water. With our tremendous increase in population throughout California the demands for water are proportionately increased. To look at the Colorado River one would think it would supply all the needs but there is talk of going even farther for water.

We sometimes wonder if our continuing to refer to moving and migratory beekeeping does not become tiresome to many of the readers of North, East, West, and South. Perhaps we do give more of our space to the large rather than to the so-called small operators. We have our reasons for this. Many of the small fellows are in the business from choice and hope sometime to count their colonies by the hundreds or even thousands. It is this class that we hope will gather here and there hints and suggestions that will help them to get some of the short cuts in manipulation and a slice of the crop by moving. Beekeeping has, more than many other agricultural pursuits, advanced materially during the past 40 years. More especially is this true since the automobile has replaced the horse in all of our beekeeping work.

By moving to more productive fields a beekeeper can often take off from 15 to 20 pounds of honey that it would have been necessary to have left on for the winter stores had the bees been left on the old stand. This together with the honey he manages to get on the new location justifies even a long move. Nor is this all: the bees will be in much better shape for the winter, with young bees and many with young queens.

It is only a few years since all bees that were to be moved had supers fastened on, entrances closed, and screens on top. Now all of this work is saved. A puff of smoke at the entrance, the hives carefully placed on the truck, well tied on, and off they go, one mile, one hundred miles, or even a thousand miles. If you are trying it for the first time better get an experienced man to help you. There are tricks in all trades and bee hauling is no exception.—L. L. Andrews, Corona, Calif.

NORTHERN CALIFORNIA, Oct. 3

Weather: The usual weather has prevailed during the past month, with some days of heat, some cold, windy days, interspersed with very enjoyable temperatures. Even a bit of rain fell in portions of northern California, but not enough to improve honey plants or to injure crops. Fall is just around the corner.

Condition of Colonies: Normal colonies are generally in good condition where they have had access to pollen and nectar plants, but because of the dryness of the soil, wild growth is generally scarce to absent. As a result, many colonies will go into winter quarters short of pollen and light in stores, a forerunner of weak colonies in the spring. In far too many locations, colonies have been seriously injured by the promiscuous application of calcium ar-

senate dusts, causing the poisons to drift over miles of territory in which the bees are working. I personally visited apiaries yesterday in which there were approximately 616 colonies. Of this number we estimated that fully **95 percent** of the colonies were so injured by poisoning that they will not pull through the winter. In fact, so few bees were present that there were not enough in the majority of hives to protect the combs from the wax moth or even to rob out honey from hives in which the colonies were entirely killed.

There were several other apiaries in the same general area and a great majority of them undoubtedly will be a total loss. Reports from other sections of northern California also indicate damage to bees from arsenical poisoning. County ordinances or agricultural codes are of little value unless enforced.

The Honey Crop: The surplus honey crop is now largely in the can and the general report is that the season has been a disappointing one. Two things have contributed to this result: first, the poor condition of the plants; and secondly, the over-crowding of available territory in northern California. This overcrowding is largely due to the poison hazard in several counties, although many apiaries have been moved north because of poorer conditions in the south.

The Honey Market: The activity in honey can be described as "quiet". The producers are holding what honey they have for better prices than those offered by the buyers, and the buyers are not taking any more honey than they have a reasonable chance of selling in the near future or have contracted for. A price of 20c is what most beekeepers are holding their better table honey for in order to make up, in part, for a poor crop produced at a higher cost than at any time in the history of beekeeping. Sales in local stores have increased slightly and the demand for white clover honey, or of equal quality, seems strong at around 18 to 19c f.o.b. producer's warehouse.

Miscellaneous: I recently sat through a trial in which a county prosecutor was attempting to prove that an airplane pilot deposited more than 7 parts per million of arsenic on an alfalfa field while broadcasting poisons over a tomato field near-by. The prosecutor lost the case because (1) he could not prove to the satisfaction of the judge that there was no arsenic in the field prior to the application in dispute; (2) he didn't prove that the dust the aviator applied was calcium arsenate; and (3) he could not show that the arsenic in the field did not come from other sources. Three analyses made in the laboratory of the state chemist, of alfalfa taken from the field and of bees killed in the field, were disallowed as "hearsay" evidence, although signed by the state chemist, because the reports were copies of the original report and because the analyses were made by an assistant who was not present in court. In commenting on his decision, the judge said that he could not see the consistency of the county allowing 7 parts per million of arsenic when it took only one part or less of arsenic to kill bees. (The tolerance was set up for dairy animals and not bees).—J. E. Eckert, Davis, California.

TEXAS, October 6

Weather: Summer temperature extended well into September with an average above normal for the month. Rainfall was scant, with no general rain occurring during the month. All areas of the state are now deficient in soil moisture, especially the southern and western portions.

Bees and Plants: At the beginning of September, bloom of a great variety of native shrubs and herbs produced a light flow of nectar and considerable pollen which resulted in increase in brood rearing. Continued dry weather cut short the late summer bloom. An invasion of the snout-butterflies, **Libythea bachmannii,** in countless numbers covered the bloom, competing with bees in search for nectar. Fall blooming shrubs and herbs so far produced little bloom. With good rainfall during the next few weeks a good fall bloom may still be expected;

otherwise colonies will go into winter with less stores and young bees than in some years. Bees have been much inclined to robbing for which reason colony manipulation and fall requeening have been difficult.

Honey Market: Movement of honey continues slow. Retail prices are generally lower at 33c to 35c for one pound glass, with consumer demand for best table grade. Large lot offers, at reduced price to stimulate movement, have not helped to stabilize price levels. Under the circumstances bottlers continue to carry light supplies. Producers are largely selling direct to grocers.

Miscellaneous: Exhibits of bees and honey at the Texas State Fair at Dallas, October 4 to 19, are the best in years.

Designation by the American Honey Institute for the week of October 26 to November 1 as National Honey Week should serve as a reminder to state organizations to designate the same period as Honey Week within each state. The time has come again to bring honey to the attention of the public.

Bee migrations to the South will soon be under way. Beekeepers who plan to migrate to Texas should note recent announcement and write Dr. F. L. Thomas, State Entomologist, College Station, Texas, for full particulars in order that regulations may be complied with.

Beekeepers are reminded of the state meeting of the Texas Beekeepers' Association at College Station on November 3 and 4.—A. H. Alex, San Antonio, Texas.

BRITISH COLUMBIA, Oct. 4

Crop Conditions: Reports to date indicate that this province has been blessed this year with the largest honey crop in its history. Best of all is the fact that the better than average flow has been fairly general in most sections of the province where bees are kept. And that takes in a lot of territory.

Our Provincial Apiarist, Mr. W. H. Turnbull, has recently returned from a trip that took him north to the Peace River Block, about 600 miles to the north of Vancouver. He is most enthusiastic as to the possibilities of this region in honey production from fireweed and sweet clover. In the Interior here the season was favorable from the start with a good build-up period during early spring. Timely rains also helped in this region of sparse rainfall. Perhaps the rains were not altogether timely from the point of view of the farmer who had hay to cut, but they surely helped the beeman where our main dependence is on alfalfa. High prices for alfalfa seed have also encouraged seed production with its longer period of bloom. In the non-irrigated sections it was noticeable that the rains prolonged the honey flow for possibly a month longer than usual. Average yields of 200 pounds per colony have not been uncommon in the most favored sections.

Honey Prices: With the removal of rationing and price controls, prices have advanced 10 to 25 per cent over previous ceiling prices but demand is still very strong and no difficulty is expected in the marketing of this crop locally at the higher price.

Miscellaneous: Feeding and packing for winter are chief items on the agenda at the present time and in our own experience bees are going into winter in splendid condition possibly because of the late flow having lengthened the brood raising period.

One feature of interest in this fruit belt this past summer has been the change in the spray programs in the commercial orchards where the whole situation seems to be in a state of flux. Arsenate of lead is on its way out and DDT and many other new materials are being used to combat the growing menace of the codling moth.

Fog machines and dusting machines are being used in application and now we are having the work done from the air by helicopters.

Net results of the season would indicate that arsenate of lead has been our worst enemy as bees near orchards have done better this year than for many years past, but our fingers are still crossed.

Greater interest is being shown in the rental of bees for orchard pollination and orders are already being received for rental colonies for next spring.—G. F. Pearcey, Kelowna, B. C.

NEBRASKA, Oct. 6

Weather: Yesterday the mercury climbed to 89 degrees to register an all time high for this time of year. So far no killing frost has reached our south central section of the state and bees are busily engaged in harvesting heartsease, or smartweed honey, a dark strong flavored honey. This good fall flow is a boon to beekeepers and quite different from last year when fall rains started in early September so there was practically no fall honey flow in this locality. This necessitated leaving heavy stores of light colored honey for wintering. This year during prolonged very warm fall weather, ample supplies of dark honey have been garnered by the bees, and beekeepers extracted all of the light honey which moves much more readily in market.

Condition of Honey Plants: We need rain badly. Winter wheat is coming up very spotty because of prolonged lack of moisture. What this will do to nectar-bearing plants is problematical.

Honey Crop: Yields received this year are as high as in the past several good years. The quality is exceptionally fine.

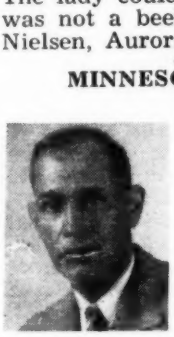
Honey and Beeswax Market: Demand for honey is holding up remarkably well; price is a little lower. Retail packaging still running to smaller size containers. Beeswax is moving at advance prices.

Miscellaneous: On the whole we are gratified at the growing interest in demand for bees in pollination work. "The value of bees to farm crops is 15 times the value of the honey and wax taken by the beekeeper" according to the Department of Agriculture. And while some few refuse to permit bees to be located on their places, and one irate owner threatened to plow heartsease under unless payment was made, the trend is toward "free pasturage" and actual per colony rental.

An interesting controversy has been waged as to the actual value of alfalfa as a preferred source of nectar. This blossom contains a "booby trap" which is supposed to "explode" when the first bee lights. Do bees object to this tripping or hammering? Well, the blossom is supposed to explode only once, and continues to secrete nectar. Anyway seed yields have been doubled by bees placed in or near the fields. Evidently all bees are not sissies—or maybe they send the "marines" in first to take the "tripping", then follow up with less courageous workers.

Recently on a radio program the honey producers' workers held the spotlight for some interesting publicity. The jackpot question was, "Eggs are sold by the dozen, milk by the quart—how are bees sold?" The lady could not answer—bet she was not a beekeeper's wife!—Benj. Nielsen, Aurora, Nebr.

MINNESOTA, October 6



Weather: We had one of the worst springs, and one of the finest falls, for weather, in many years. In between was an August drouth that dried up nectar plants. Here and there places received rain. September was generally bright and the bees had a slow flow. The cool late spring retarded colony build-up and way into June we saw starving colonies with plenty of blossoms outside—and rain! What a year for weather!

Bees: Package bees were late and hard to manage, with a large loss of queens. The Minnesota beekeeper who made even a fair profit from packages this year is exceptional. Colonies built up on the best part of the main honey flow and some beekeepers report much July swarming. Fortunately, in September considerable winter stores were gathered and on this date most colonies are in very good condition as to queens, young bees, and stores. Upstate beekeepers are fall killing more colonies than usual.

Honey The southern half of the state reports a little the better crop with most yards yielding from 50% to 70% of a normal crop.

Prices: There is a wide range of prices (now that we are again faced

with a buyers' market and keen competition with other foods), anywhere from 18c to 32c per pound. In the present unsettled condition 30c honey sells as well as 18c honey—both slow. Some beekeepers are holding their honey for an expected increase in demand and price, figuring that in these times "anything can happen".

Comment: We asked Minnesota beekeepers if they had a "gripe" to air, and nearly every reply had to do with honey prices. One was "against small beekeepers offering honey for 90c per 5-lb. pail". Another wrote "seems like the beekeeper is in for a hard row, with highest ever operating expense, lowest per colony average, and with no market for honey we may soon be doomed to cease operations".

Clovers are in only fair condition and farmers are against planting sweet clover especially when grain and flax brings such high money returns.—Bruce Morehouse, Montevideo, Minn.

PENNSYLVANIA, Oct. 1

Weather: The season of 1947 has been somewhat disappointing for the beekeepers of Pennsylvania. There was very little clover honey stored except in a few southeastern counties and even there a good part of the surplus has been consumed by the bees during the past two months. Wild flowers, such as sumac and milkweed, as well as basswood, produced a fair surplus but this honey which is normally light in color is far from light this year.

The spring flow was very late as it was last spring, and continued into the buckwheat flow so that all surplus was fairly dark. There is not enough buckwheat mixed with the early surplus to give it a buckwheat flavor but there is enough to darken it considerably.

Much more buckwheat was grown in Pennsylvania this season because of the late spring which prevented farmers from planting some of the early crops and the fields were utilized by planting them to buckwheat. Another factor which encourages buckwheat growth in central Pennsylvania is the growing of peas for canning. The peas can be harvested early and in time for planting buckwheat to be turned down for green manure.

Swarming was excessive from April to August because of the nature of the honey flow. Nectar would be gathered in fair quantities for a few days when rainy weather prevented the bees from working for a week or more. This type of alternating flow continued during most of the swarming season and made it quite necessary to remove queen cells or catch swarms.

Market: The honey market is much slower than at this time last year. Cold weather in September has not increased demand as it normally does; some improvement has been observed but not as much as might be expected. The price of honey is also below that of last fall. Most reports indicate a retail price of 32 to 44 cents in one-pound jars and $1.25 to $1.75 in fives. The darker color of honey this summer has not helped the market any.

Miscellaneous: Favorable reports continue to come in from beekeepers who attended the one week short course at Pennsylvania State College last August. Beekeepers from seven states were present. The class extracted over a ton of honey one afternoon and evening, then bottled it the next afternoon and bought quite a little to take home. Marketing honey will be emphasized more during the course in August, 1948.

The weather today is very cold for this time of year. Heavy frosts occurred for three nights in central Pennsylvania, Sept. 24, 25, and 26. The weather has continued cold and windy so that the bees are unable to work, even though aster is in full bloom. Considerable feeding will have to be done in central and southern Pennsylvania if the weather doesn't warm up soon. The fall flow was fair in north central Pennsylvania where the flowers open about a month earlier.—Edwin J. Anderson, State College, Pa.

COLORADO, October 6

The Weather: The late summer of 1947 has been one of the driest since 1934. And while it has been fine for the grain farmer to harvest his bumper crop, it does not promise too well for the honey prospects of 1948. While this is nearly all irrigated country still the activities of Jupiter Pluvius play an important part in the fortunes of the beekeeper.

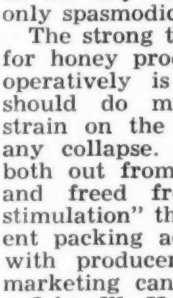
The Crop: Most beekeepers in this area missed a large portion of the available nectar in the early part of the season by failing to have bees of sufficient strength to produce optimum results. We have been long advised to have bees at the peak at the beginning of the honey flow. That is much easier said than done at all times, but was especially true of this past season, for the tendency to swarm was the worst in several years. Coupled with the inferior queens we got as a result of the backward season in the South and the high percentage of Nosema infection in these queens, most of us stepped up to the plate with two strikes on us. The drouth conditions in late summer kept August from being the good month it often is. When we have July rains and an abundance of irrigation water, August is often our most productive month.

While there are a few producers reporting averages up to 150 pounds per colony, many are reporting less than 100 pounds. Perhaps these are only modest.

The Market: The small producer-packer seems to be the only one who is much disturbed about the market. The past few years he got into the habit of selling his crop in three months and he has not yet taken time to realize that honey need not be sold that way. It seems that the crop is surely going to be no greater than normal and should sell well at good prices—surely not for the extortion prices of a year ago, but high enough to be in line with other foods. The people who bought honey only because they could not get sugar have mostly gone back to their first love. A few may have got the "honey taste" and will stay with us. But there are enough people who buy honey because they love it and know it is a good food. It once more becomes our job to reach these people. They have found the honey shelf bare on many occasions. It may be that they need to be reminded that honey is again available. The time has come for honey advertising on a large scale— the time has come to sell honey. I said "Sell"—not give it away. There is no reason for honey to have to move at distress prices. The crop is not in excess and the food price index is still strong. Few commodity prices have shown any weaknesses and these only spasmodically.

The strong tendency in late years for honey producers to market cooperatively is still gaining. This should do much to relieve any strain on the market and prevent any collapse. Now that honey is both out from under price control and freed from "sugar shortage stimulation" the merits of independent packing activities as compared with producer owned cooperative marketing can be fairly evaluated. —John W. Holbzerlein, Jr., Grand Valley, Colo.

MAINE October 8



Weather: After a wet and backward spring, a period of favorable weather for nectar secretion and bee flight came in late June and July. At Orono, about 80% of the 1947 crop was gathered between June 15 and July 20. For much of the state a good flow from clover was obtained. In parts of the state where milkweed occurs, the clovers were followed by a good flow from that plant. The usual goldenrod and aster honey crop was reduced in central and southern Maine as a result of dry weather in August.

Honey Crop: A yield considerably above the average of excellent quality honey was secured by most beekeepers. An average yield of a little over 200 pounds in an apiary of 12 colonies is reported by a beekeeper

at Houlton. Averages of 50 to 80 pounds are more common for most of the state.

Market: Demand is excellent and a large part of the crop has already been sold by the producer to the local trade. $2.00 for a 5-lb. pail is about the average price.

Miscellaneous: An economy minded Legislature last spring provided no funds for disease inspection. As a result on July 1 bee inspection was suspended and no work of this kind will now be possible for two years. Beekeepers were lax in not attending the Agricultural Committee meetings of the Legislature.—C. O. Dirks, Orono, Maine.

MONTANA, October 7

Weather: Seldom has a spring been more favorable for build-up than this last one. Colonies reached their peak early. The main flow and swarming came at the same time. Our nights are usually plenty cool and swarming not difficult to control so no constructive measures had been taken to meet the condition.

Generally speaking, weather and plant conditions have been good. A big crop should have resulted except for DDT spraying by power sprayers, airplane dusting of pea fields, and orchard sprays, and one factor always detrimental, dearth of nectar in some locations. Many localities experienced a heavy frost on June 29 which seriously damaged alfalfa bloom. A few scattered sections report a good crop, mostly about normal, while a few report about half a crop.

Market: Sales of honey are fair, mostly to consumers. Prices range from 20c to 25c in sixties, 25c to 35c in smaller containers. Many stores refuse to stock honey. One dealer said the beemen ignored him when the demand was good and he doesn't care to handle their product on that account. Perhaps this is the attitude of many who we are told refuse to stock even small orders. The large buyers are offering 15c and 18c but no sales have been reported at such prices.

Miscellaneous: Bear have been a serious menace since late summer. The frost of June 29 killed all bloom of the berry-producing shrubs in the mountains. These berries and choke cherries provide old bruin his living until late fall, so being hungry, they have come down to the lower valleys for berries and anything else they can find. A neighbor recently lost two beeves in one night to a bear close to his home. One bear was killed at the edge of one of our yards—an immense brute. At another yard several colonies were destroyed and when we got there it looked as if about three cyclones had struck. It's a caution how a bear can take a yard apart. We lay in wait for it for two nights but with no success. We then set a trap and caught it by the toes. Evidence was that it made an awful rush for the fence when the trap sprung, hit the fence, and about demolished it. We had made a V-shaped pen baiting the back end with bacon, and set a trap at the entrance. An Indian trapper tells me we should have set the trap crosswise which would have given a better hold.—T. J. Rowe, Arlee, Montana.

ONTARIO, October 7

Weather: September, like August, was unusually warm until the last week in the month, when heavy frost killed all the tender vegetables locally. In fact, the Toronto Observatory states that all records for heat for the month were shattered. In view of this unusually warm weather, coupled with the fact that at some locations we have a lot of fall flowers such as asters, we thought that some honey would have been gathered. But all apiaries registered zero in so far as any surplus was concerned. We may safely say that for our locality little or no honey can ever be expected after August has passed.

Sorry to report that as a result of the extreme heat and drouth of August the buckwheat crop, in so far as seed is concerned, is almost a complete failure and many fields will not be threshed. We are sorry for the farmers' loss, and of course this failure is apt to have repercussions for the beekeeper, as less buckwheat will be sown next year.

Honey Markets: Movement of honey has been rapid and prices much higher than last year—in fact,

some beekeepers seemingly do not know how high a price to ask, and, strange to say, some buyers seem to have no limit as to what they are prepared to pay. Personally we view with alarm the present tendency to skyrocket all prices and surely we are all in for a rude awakening soon. Bees are in good condition with not as much feeding to do as was necessary a year ago. Feeding is being done now generally, and with a temperature yesterday of 80, feeders are soon emptied.

Miscellaneous: In common with many other beekeepers, I believe, we read with surprise that editorial on page 609 relative to buckwheat. And we were more or less amused to see the following statement "beekeepers in a region where no buckwheat is grown have something to be thankful for". The majority of beekeepers in this province would paraphrase that statement and say that they have much to be thankful for if buckwheat is grown around their apiaries.* Personally, we would have to report going into the RED again this year if it had not been for buckwheat, and after many years of experience with bees in localities where no buckwheat is grown and with other apiaries situated where buckwheat IS grown, unhesitatingly we would have to report that the latter locations are away ahead. And do not forget this fact—clover honey well ripened with some buckwheat in it is much better than green clover honey with no buckwheat honey mixed with it. At present we are selling our honey that is about half and half, in so far as clover and buckwheat are concerned, at a higher price than we received for pure clover honey.

Congratulations, friend Mraz, on your splendid article in the last issue of Gleanings re the matter of wintering and springing bees. Many will be surprised to note that you do not say anything about early stimulating in the way of feeding pollen substitutes at a time when you would need to carry a shovel to remove snow from the tops of the hives in order to get the material on top of the frames. We would especially endorse what Mr. Mraz says in one paragraph of this article "In fact, if it were possible, I'd like to put my bees in cold storage in the spring until May 1". Without exception, as we have repeatedly stated, our best colonies every spring are those that winter quietly with abundance of stores and that conserve their strength by not doing too much winter or early spring brood rearing, and that come to full strength just as, or a little earlier than, our main honey flow starts. —J. L. Byer, Markham, Ontario.

*[We can see why you take exception to that statement, friend Byer, but we were only calling attention to the problem of keeping white honey from becoming mixed with dark honey. Honey is honey and, in our opinion, its quality should not be based on its color, but rather on its flavor. Glad to know you Canadians like a mixture of clover and buckwheat honeys. We Americans prefer ours straight.—Ed.]

Georgia Beekeepers Meet

The North Georgia Beekeepers' Association and the Georgia State Beekeepers Association sponsored the Southeastern Honey Show and Southeastern Package Bee and Queen Exhibit in connection with their Convention October 2 and 3 at Atlanta.

A fine display of package honey, beeswax, and equipment was shown at the H. G. Hastings Company display room. The honey exhibit should be an inspiration to producers to continue the high standard of the combined chunk and liquid honey package so popular in the South.

Under the able direction of Chairman L. C. Dotson, who arranged the meeting, an excellent souvenir booklet of the proceedings of the meeting was published. The program of speakers covered the grading of honey, honey recipes and uses, the importance of bee pollination to agriculture, honey plants, extension work, outlook for bee supplies, the advantages of modern equipment, package bee production, air transportation for package bees, and a honey demonstration, conservation, marketing honey, bee pasture, and queen breeding.

An interesting report given by A. V. Dowling showed that out of some 65,000 colonies inspected for AFB in the state of Georgia during 1947 less than ½ of 1% showed signs of this disease. The state of Georgia can indeed be proud of this record.

American Honey Institute News Notes

Mrs. Harriett M. Grace, Director
Commercial State Bank Building
Madison 3, Wisconsin

WHO?.....You! WHAT?..... Join the American Honey Institute! WHERE.....Commercial State Bank Building, Madison 3, Wisconsin. WHY?.....To help expand the work of promoting the use of honey throughout the nation. WHEN?..... .....NOW!!!

* * * * *

Another printing of **Old Favorite Honey Recipes** has just been made. This book grows more popular every year. Homemakers order copies for themselves and friends because they like the recipes and enjoy making good things with honey. Honey packers order **Old Favorites** because they know that these books serve as publicity agents for themselves and for their product.

A single copy of **Old Favorite Honey Recipes** or **New Favorite Honey Recipes** in the hands of a customer will establish a bond of good will for you.

* * * * *

Honey calendars are ready for delivery now. Be sure to order yours now if you wish to enclose them with Christmas cards or gifts of honey books. The bright new design in golden yellow and black is a real eye-catcher, made to attract attention to honey. This is the verse that appears on the back:

What food can hold
The purest sweet a thousand fold
In Nature's unrefined gold?
'Tis Honey.

When energy
Is needed most in you or me,
What food has in it high degree?
'Tis Honey.

Now every day
Let's serve this nectar in some way
To give us strength in work and play,
With Honey.

* * * * *

A Honey-Quickie is the contribution Mrs. Harriett M. Grace makes to busy mothers in October issue of **Parents' Magazine.** The recipe is for delicious Honey Cinnamon Toast. Incidentally, if you have a hankering to know what Mrs. Grace looks like, her picture appears with the Quickie recipe.

The same issue of **Parents' Magazine** carried good publicity for National Honey Week in the column "Mothers are Talking About.....". The American Honey Institute wants mothers to know the value of honey for youngsters, for it is the mothers who do the buying.

* * * * *

Here's an old use for honey that is even new to many honey enthusiasts. We have learned of some beautiful decorative work done in an army chapel in Germany, in which the sgraffito technique was employed. The base surface is first covered with red plaster. When this has hardened, it is covered with white plaster an inch thick. This white outer layer is then chipped away, leaving just the design in white against the red background. The final touches are added by the application of a mixture of gold leaf and honey! The complete effect is unusually beautiful, and the beauty is lasting.

* * * * *

The directory of the American Honey Institute will be printed soon. Your name ought to be included in this list of the people who are working together for the good of the honey industry. Write to the American Honey Institute for further information, and become a member of this active organization.

* * * * *

The entire back cover of the October 4 issue of **The Saturday Evening Post** is devoted to a mouth-watering, full-color advertisement for a Plantation Breakfast, including hot biscuits and honey.

* * * * *

Cool weather is good cooking weather. Women really enjoy being in their warm fragrant kitchens, knowing that they are going to make something especially delicious. Yes, women are in a receptive mood for cooking suggestions, and the American Honey Institute's recipe books are full of them—tempting recipes, all made with honey.

Make it your responsibility to see that the women have good honey recipes now that will make them year around users of honey.

Just News

The California State Beekeepers' Association will hold its annual convention in the northern section this year, in the city of Redding, on December 9, 10, and 11.—J. E. Eckert, Apiculturist.

* * * * *

The Empire State Honey Producers' Assn. will hold its annual winter meeting at Syracuse Hotel, Syracuse, N. Y., on December 5 and 6, 1947. An excellent program has been arranged, with prominent out-of-state speakers. All beekeepers, their families, and those interested in beekeeping are invited to attend. —E. T. Cary, Sec. Treas.

* * * * *

Come to the Illinois State Beekeepers' Association Annual Convention, November 14 and 15, at the St. Nicholas Hotel in Springfield, Illinois. Get acquainted with your favorite beekeeping experts. Hear what they have to say in regard to leading beekeeping questions. The speakers are Ellsworth A. Meineke, President of Illinois State Beekeepers' Association; V. G. Milum, Apiculturist of the University of Illinois; Walter T. Kelly, Editor of "Modern Beekeeping"; Lloyd C. Gardner, Chairman of National Council of Honey Marketing Cooperatives, a representative who will speak on "Spray and Dust Poisoning of Bees in Illinois"; Glenn O. Jones, Secretary of the National Federation of State Beekeepers' Associations; Mrs. Harriett M. Grace, Director of American Honey Institute; and our old favorites, M. J. "Jack" Deyell, Editor of "Gleanings in Bee Culture", Charles "Chuck" Dadant, and G. H. Cale, Editor of "American Bee Journal". — Hoyt Taylor, Sec.

* * * * *

North Jersey Beekeepers having closed their outdoor season of field meetings and started an even greater indoor season, now plan to hold a dinner this month, notice of which will be given in the orgainzation's regular monthly news - letter. Awards for the Honey Exhibition held on October 31 and November 1 during National Honey Week will be given at this dinner. Watch for the date in the regular news-letter. There is no meeting scheduled for December, but again in January the officers have announced that they will have another surprise for the members who attend the January meeting. — Richard A. Geoghegan, Sec.

* * * * *

The Bronx County Beekeepers' Association will hold its next regular monthly meeting at the home of Mr. Frank Glazer, 3424 Gates Place, Bronx, at 2:30 P.M., Sunday, November 9, 1947.—Sam Roberts, Sec.

* * * * *

The Annual Meeting of the Iowa Beekeepers' Association will be held at Ames, November 13 and 14, in the Memorial Union. This meeting is in conjunction with affiliated organizations of the State Horticultural Society. An unusually strong program is being developed for beekeepers. A copy of this program will be available for distribution approximately November I. Everyone who is interested in beekeeping is invited to attend all of the sessions. —F. B. Paddock, Extension Apiarist.

* * * * *

The Westchester County Beekeepers Association will hold its regular monthly meeting at 2:30 P.M. on Sunday, November 16, 1947, at the Odd Fellows Hall, 20 Lockwood Avenue, New Rochelle, N. Y. Following the meeting, instructive movies will be shown and wintering of bees will be discussed. Visitors are always welcome. Refreshments will be served.—B. F. Miller, Publicity.

* * * * *

The Montana State Beekeepers' Association will hold its annual meeting at the Baxter Hotel, Bozeman, Montana, Dec. 1 and 2. Montana speakers will appear on the program. The meeting will begin at 10:00 A.M., with banquet at 6:30 same day.—Gertrude M. Burdett, Sec.

* * * * *

The Minnesota Beekeepers' Association will hold its annual convention in the East Room of the Curtis Hotel, Minneapolis, on November 10 and 11. A number of interesting features are planned. Prominent

(Continued on page 696)

Price of Honey

Interest has been great in the price of honey in the past few months. The following figures represent an expression of current prices from beekeepers and honey packers over the country. They are based on several reports from each state averaged with all of the reports in the region. Where insufficient information is returned, prices have been omitted from the chart. Where three figures appear on the chart the first represents the low, the middle figure the average, and the third figure the high.

Monthly Honey Report (Prices expressed in cents per pound)

	North East	South East	North Central	Mid West	North West	South West
Bulk Honey						
Table Grade	18-21-25	18-20	18-24-33	17-21-30	16-18	13-16-19
Industrial Grade	15-17-20	12-18				12-14-16
Price to Grocers						
5 lb. jar	23-26-30	20-27-35	24-29-30	20-24-28	20-22	22-30-40
3 lb. jar	20-26-33	19-36	22-25-27			
2 lb. jar		19-37	27-29-34	29-30-33		25-35
1 lb. jar	24-30-37	25-37	29-32-40	28-31-35		27-36-48
Comb Honey (24's)	9.60	7.20-9.00	9.00-12.00	7.60-10.60		
Retail Price						
60 lb. can	21-23-30		23-31	17-22-25	20-22	20-23-30
5 lb. jar or can	30-35-50	27-40	20-35-41	20-30-37	23-34	25-30-35
3 lb. jar	33-39-43	25-40	25-38-48			
2 lb. jar	37-42-50	28-35	30-39-48	38-39-43		32-45
1 lb. jar	35-44-55	30-45	33-45-55	37-42-57	35-42	30-45
Honey Sales	**Fair**	**Slow**	**Slow to Rapid**	**Slow to Fair**	**Slow**	**Slow to Rapid**
Estimated Crop						
Conditions based on normal (%)	90	40	45	75	75	60

National Federation Meeting at Salt Lake City Jan. 15-16, 1948

You have the opportunity of making our annual meeting of the National Federation at Salt Lake City the biggest and best meeting of beekeepers ever held in the United States.

From the entire western half of the United States, where extensive beekeeping operations are numerous, it is easily reached by automobile, railroad, or airplane. From the eastern half it may be a more difficult trip, but the interest of the meeting and the value of the program will make it worth while to spend a little time and effort on the trip.

Special emphasis will be on "Marketing in 1948", improved nectar and pollen sources, and the menacing loss of bees to agricultural insecticides.

Dr. H. H. Bennett, Chief of the Soil Conservation Service, will be there to tell us about "The Influence of Honeybees on the Soil Conservation Program". Director R. H. Walker of the Logan, Utah, Agricultural Experiment Station, will discuss "Honeybees and Agricultural Prosperity in Utah". Dr. E. F. Phillips will have an evening program on "Bee Behavior", a subject that is of never-ending interest, and M. S. Stone will serve as Toastmaster at the Banquet which will wind up the two-day session.

The complete program will appear in December and you will be pleased with the selection of topics.

More About Death's Head Moths

By John Read

In reference to your recent article on Death's Head moths in hives, I quote from an English publication on butterflies, etc.: "The Death's Head is the largest of all British butterflies and moths. It has a wide range in Europe, Africa, and Asia. It is this moth which is addicted to entering the hive and feeding upon the honey, when, it is suggested, its peculiar noise resembling the note of the queen bee, secures it immunity from attack".

Does the queen make a noise after leaving the cells?

If not, according to this writer, the moth would only be safe while there were near hatching queen cells.

Goorow, Australia.

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate:—12c per counted word, each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in by the 10th of the month preceding.

HONEY FOR SALE

FOR SALE—White clover honey in sixties. Carl F. Krueger, Fenton, Ia.

FOR SALE—Extracted and section comb honey. C. W. Schrader, Waterville, N. Y.

LIGHT AMBER and amber honey in 60-lb. tins. Sample 10c. Joseph Fekel, Vineland, N. J.

WE BUY AND SELL all varieties of honey. Any quantity. Write us for best prices obtainable. The Hubbard Apiaries, Manufacturers of Bee Supplies, Onsted, Mich.

BEST GRADE HONEY FOR SALE—in large quantities. 25c lb. in your containers. E. R. Raley, Box 1610, Daytona Beach, Fla.

WHITE and amber honey for sale in 660-lb. drums, 60-lb. tins, and in glass jars. Alexander Co. 819 Reynolds, Toledo, Ohio.

FINEST QUALITY SOURWOOD honey, 60c per lb. in 5-lb. pails F.O.B. my place. Alamance Bee Co., Graham, N. C.

FOR SALE—Dark amber extracted in 60's, 20c per lb. Comb, amber to dark, $6 and $8 per case of 24 sections. H. G. Quirin, Bellevue, Ohio.

FINEST CLOVER extracted honey 60 lb. cans, $15.00 per can F.O.B, Medina. Irvin VanDevier, Medina, O.

WHITE CLOVER HONEY in new 60-lb. tins, $15. Sample, 15c. Busy Bee Farm, No. Abington, Mass.

AMBER HONEY for sale in 5-lb and 60-lb. cans at reduced price to close out. M. E. Ballard, Roxbury, N. Y.

COMB HONEY, Water White No. 1; packed in window cartons. Nine dollars per case. Frank Fekel, Almond and Mill Road, Vineland, New Jersey.

Don't run out of honey. Can supply you with 1, 2, and 5 lb. honey in case to truck lots ready to label. John Tideswell, 2711 North 63rd St., Omaha, Nebraska.

FOR SALE — Buckwheat comb honey, $7.25 per case. Cellophane wrapped, 25c extra. Carriers of 8 cases. Single case by express at buyer's risk. Edgar Williams, Pierpont, Ohio.

FOR SALE—1000 60's Wisconsin buckwheat and clover honey mixed, good flavor. 1000 60's heartsease, heavy body, color very light. Box 3522 care of Gleanings in Bee Culture, Medina, Ohio.

FOR SALE—100,000 lb. Eby's Wisconsin clover honey, $15.15 F.O.B. W. Elkton, in 60-lb. tins. Also available in 1 to 5-lb. glass. Beekeepers take notice—do not let your trade lapse—this is a fine flavor white honey—the kind of honey you will be proud to supply your customers. Alan Eby, West Elkton, Ohio.

AMBER HONEY CLOVER - BUCKWHEAT, mixed, 18c in 60's. F. J. Smith, Castalia, Ohio.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTICE—We can not guarantee honey buyers' financial responsibility, and advise all beekeepers to sell for cash only or on C. O. D. terms except where the buyer has thoroughly established his credit with the seller.

WANTED—Comb and extracted clover honey. State price in first letter. Honeymoon Products Co., 39 E. Henry St., River Rouge 18, Mich.

WANTED — White and amber honey, any amount. D. F. Treap, 315 Keenan Ave., Cuyahoga Falls, Ohio.

HONEY & BEESWAX — Highest prices paid. Mail samples. Advise quantity. BRYANT AND SAWYER, LOS ANGELES, CALIFORNIA.

WANTED—EXTRACTED HONEY— Clover or Light Amber. C. H. Denny, 483 Moody St., Akron, Ohio.

CASH FOR YOUR HONEY—Extracted or comb. Regular trade, send sample. 60-lb. cans furnished, if desired. W. R. Moomaw, Stone Creek, Ohio.

HONEY WANTED—All grades and varieties. Highest cash prices paid. Mail samples. State quantity. HAMILTON & COMPANY, 1360 Produce St., Los Angeles, Calif.

HONEY WANTED—All grades. Carloads or less. Also beeswax. Pay top prices. H. & S. Honey & Wax Co., Inc., 265-267 Greenwich St., New York 7, N. Y.

ALL GRADES of white and amber honey wanted. Carloads or less. Mail sample and price. Alexander Company, 819 Reynolds Rd., Toledo, Ohio.

WANTED—Clover extracted and comb honey. Any quantity. State price in first letter. C. Jankowski, Prairie View, Ills.

WANTED—Clover extracted and comb honey. L. Konces, North Abington, Massachusetts.

WANTED—Large or small lots comb, cut comb, chunk, and extracted honey. Our trucks will pick up at honey house. Wire collect or write us what you have. Let our representative call on you. References: Manufacturers and Mechanics Bank or Merchants Bank of Kansas City, Mo. We also offer carlots or less bottled honey. All sizes for sale. Frank King and Son, 326 South Bales Ave., Kansas City, Mo.

WANTED—1,000,000 lbs. honey. Send 2 lb. jar sample. We pay highest cash prices. Vinnedge Bestyett Co., Fort Worth, Texas.

WANTED—Comb honey and extracted honey. State price. Thomas J. McDermott, Boonton, N. Jer.

WANTED — Light extracted honey in 60's. Clover preferred. J. Jones, 115 W. 82nd St., New York 24, N. Y.

FOR SALE

QUEENBEE PAINTING OUTFIT, $1.00; colony records, 10-15c postpaid. Southwick Apiaries, Waban, Mass.

HONEY LABELS — Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples and prices. C. W. AEPPLER COMPANY, OCONOMOWOC, WIS.

Pure Northern maple syrup in 5-gallon or 1-gallon containers at $4.85 a gallon. The Alexander Company, 819 Reynolds Road, Toledo, Ohio.

FOR SALE — 2-lb. round honey jars, packed 12 to carton, with caps, 42c per carton, or $5.00 gross F.O.B Summerfield, Fla., Route 1, J. W. Reitz & Bros.

WRITE FOR CATALOG — Quality Bee Supplies at factory prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Manufacturers of Beekeepers' Supplies, Onsted, Mich.

We carry a complete stock of bee supplies and honey containers. Write for our price list. Prairie View Honey Company, 12303 12th St., Detroit 6, Mich.

SIMPLEX TRAP clips queen without handling. $1.75 postpaid. INSTANT FRAME spacers seven-eight-nine, fast—accurate, $1.50 postpaid. Free circulars. George Leys, 48 Drake Ave., New Rochelle, N. Y.

WRITE FOR LOW CASH price glass jars and 5-lb. tin pails. Complete stock. Prompt shipment. Roscoe F. Wixson, Dundee, N. Y.

FOR SALE—VOHO Entrance Closures! They save you valuable time, your bees, and your equipment. VOHO Entrance Closures securely screen an entrance in less than three seconds. VOHO Entrance Closures automatically lock into position when placed in the entrances. There are 12 distinct occasions when VOHO Entrance Closures will facilitate your beekeeping operations. VOHO Entrance Closures allow maximum ventilation with the least disturbance to the bees. Write for quantity prices and facts about these amazing new aids to beekeeping. Priced to sell—Upper, $0.80;—Lower, $1.30. Satisfaction guaranteed. VOHO PRODUCTS, R. F. D. 2, Ogdensburg, New York.

EXTRACTOR for sale, 2 frame automatic reversible, hand drive; Root No. 5B., $25.00. Erwin Harr, Columbia, Illinois.

FOR SALE — All purpose H-B-Stand. Four required to 20' pipe; $1.00 each. Clean frame, stand, migrate, cut grass easily. Best stand made. Stands level at 2 lbs. or 2 tons. E. W. Hedstrom, Zion, Ill.

BEES AND QUEENS FOR SALE

We use all possible care in accepting advertisements, but we cannot be held responsible in case disease appears among bees sold or dissatisfaction occurs. We suggest that prospective buyers ask for certificate of inspection as a matter of precaution.

THREE-BANDED ITALIAN queens, untested, $1.10 each up to 25; over 25, $1.00 each. Alamance Bee Company, Graham, N. C.

HONEY WANTED
Carloads and less than carloads. Mail sample and best prices in all grades.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

HONEY WANTED
Mail your offerings and samples to us. Prompt cash on receipt of Honey.
Jewett & Sherman Company
Lisbon Rd. & Evins Ave.
Cleveland 4, Ohio
1204 W. 12th St., Kansas City 7, Mo.

WANTED
1,000,000 Lbs. Honey.
Send 2 Lb. jar sample.
We pay highest cash prices.
Vinnedge Bestyett Company
Fort Worth, Texas.

Bees and Queens
Italians - Causasians and Daughters of Queens
Bred for Resistance
Over 30 Years a Shipper
Send for FREE Circulars
BLUE BONNET APIARIES
Weslaco, R 2, Box 23, Texas.

STEEL DRUMS FOR HONEY
Ship your honey in Steel Drums (no leakage in transit)
Drums free to our shippers.
Write us.
The Fred W. Muth Co.
229 Walnut St.
Cincinnati 2, Ohio

HONEY LABELS
Improved designs, embodying color, balance, simplicity, and distinction. Please send for free samples & prices.
C. W. AEPPLER COMPANY
Oconomowoc, Wisconsin

Root QUALITY

BEE SUPPLIES

also

Michigan's Most Complete Stock Honey Containers for Extracted, Section, and Cut Comb Honey

Write for price lists and discount rates

Paying Top Prices for Beeswax

M. J. BECK CO.

510 N. Cedar St. Box 7

Lansing 1, Mich.

PACKAGE BEES AND QUEENS

Leather Colored Italians Bred for Production

Prices of Package Bees and Queens:

Lots of:	2 lb.	3 lb.	Ex. Queen
1 to 24	$4.00	$5.00	$1.25
25 to 99	3.85	4.80	1.10
100 or more	3.75	4.70	1.10

Terms 25% deposit to book order, balance ten days before shipping date. We replace any bees that die in transit if it's our fault. If it is the carriers' fault, file claim with them. We start shipping February 1. Old customers will be given preference.

The Island Apiary

Collier City, Fla.

PACKAGE BEES AND QUEENS. Three band Italians. 26 years' experience. Circular free. Crenshaw County Apiaries, Rutledge, Ala.

CAUCASIAN QUEENS and package bees. Booking orders for 1948, subject to price Nov. 1. Lewis & Tillery Bee Co., R 1, Box 280, Greenville, Ala.

BOOKING PACKAGE BEES with Caucasian Queen for spring delivery. Write Miller & Evans, Three Rivers, Texas, Route 1.

CAUCASIAN QUEENS to fill your hives with gentle high producing bees. Howard Crom, Ripon, Calif.

ITALIAN QUEENS—$1.10, any number. Satisfaction assured. Shipped by airmail for better service. Lange Apiaries, Llano, Texas.

FOR SALE—800 empty supers, 8-frame, good condition, 35c each. Also 200 deep Jumbo 10-frame hives of bees with one super around, $10 each, guaranteed no disease. Nealey Honey Co., Aberdeen, Ida.

FOR SALE—150 colonies bees, 10-frame; 30-frame radial extractor; 400 supers, drawn combs; 100 new hive bodies, never used; 4-frame extractor. All equipment practically new and painted. Bees will be inspected before selling. Sal Martino, Vatalie, New York.

GOOD ITALIAN QUEENS, $1.00 each. D. W. HOWELL, Sheilman, Georgia.

BOOKING ORDERS for package bees and queens for '48 shipment. Walter D. Leverette, P. O. Box 364, Fort Pierce, Fla.

600 colonies bees, equipment for 800, all standard ten frame; 3-horsepower boiler, Stoller uncapper, 2 50-frame extractors, many other items including bottling equipment, 1½-ton Chevrolet truck. Will sell all as complete unit or four story colonies for $30.00. Inspection certificate furnished. Northern Michigan Apiaries, Petoskey, Michigan. Reference: First National Bank of Petoskey and A. I. Root Co., Medina, Ohio.

FOR SALE—18 colonies in new two story 10-frame, heavy with honey, started on Root's 3-ply foundation; also 12 8-frame colonies, good supers. Never had disease. John Haag, Olpe, Kansas.

FOR SALE—250 colonies 10-frame, 2-story, fall crop on, $14.00 each. Warranted clean. I must quit, but I will help (limited) new beginner. E. A. Bethurum, 1009 Clay St., Redlands, Calif.

WANTED TO SELL—365 colonies of bees in Michigan. Disease free. Plenty of stores for wintering, lots of extra equipment. Will sell at reasonable price to cash buyer. Reason for selling—have other interests. Address Box 1207, Gleanings, Medina, Ohio.

BREWER'S LINE-BRED CAUCASIAN QUEENS—We have closed our queen yards for 1947. Now booking orders for April delivery. 30c deposit on each queen at time of booking. No package bees. Brewer Brothers Apiaries, 3616 Caucasian Circle, Tampa 6, Florida.

BEES, 100 colonies, 2 high, equipment, winter food. 20-frame extractor, plus other supplies. Must sell. Make offer. Inspection certificate furnished. Ph. Orange 485-J. Frank Gaida, R.D. 1, Box 451, Orange, Calif.

SUPPLIES

ATTENTION BEEKEEPERS IN MINNESOTA and adjacent states. We offer a real service on Lewis-Dadant Bee Supplies, honey containers, and labels at a price saving to you. Top market price paid for extracted honey and beeswax. HONEY SALES COMPANY, 1806-08 NORTH WASHINGTON AVE., MINNEAPOLIS 11, MINN.

WANTED

SHIP ME PACKAGES in November and December from inspected hives. Write me particulars. Paul D. Thompson, 127 Ave A N. E., Winter Haven, Fla.

SEEDS

NECTAR AND POLLEN YIELDING TREES, SHRUBS, and PLANTS for your section. Write for our illustrated descriptive Folder now and plant this fall. NICOLLETT COUNTY NURSERY, St. Peter, Minn.

Chinese Vitex, nice blooming size, 20c each, postage paid on a dozen or more. Seed, 50c an ounce with instructions how to grow. M. F. Bond, 1601-E-6, Joplin, Mo.

SEEDS OF HONEY PLANTS—New circular just printed describing 45 good honey plants. Get your copy now and order early while seed stocks are complete. Special: one packet each of 12 good honey plants for $2.00 postpaid. Pellett Gardens, Atlantic, Iowa.

HELP WANTED

WANTED HELPERS, queen breeder, and wood workers with some mechanical experience, in our apiaries. Hyland Apiaries, Sylvester, Georgia.

WANTED — Year around or seasonal beekeeper's helper, capable, willing, young married man preferred. State qualifications, wages expected. Roger C. Lane, Trumansburg, N. Y.

WANTED — Experienced queen yard man. Year around employment in yards and shop. We can furnish a good modern home to live in. Give full information, age, experience, and salary expected in first letter. H. C. Short, Fitzpatrick, Ala.

MAGAZINES

INTERESTING, NEW, DIFFERENT, PROFITABLE magazine. For the person with only a city lot or several acres. Write: BACKYARD FARMER, 224 Bellis Street, Duluth 3, Minnesota.

THE BEE WORLD—The leading journal in Great Britain and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy post free. 12 cents stamps. Membership in the Club including a subscription to the paper, 10/6. The Apis Club, L. Illingsworth, The Way's End, Foxton, Royston, Herts, England.

DO YOU FIND it difficult to secure information about sheep and sheep ranching methods? The SHEEP AND GOAT RAISER reaches more sheepmen with more information on range sheep than any other magazine published. Subscription—$1.50. Hotel Cactus, San Angelo, Texas.

CAUCASIANS
CARNIOLANS

We wish to thank our many customers again for their patronage during 1947. Sorry at times we could not keep up with orders for our queens.

We are establishing a branch of our Caucasian queen rearing apiary in southern Florida from which location we expect to supply queens and a limited number of packages early in 1948. See later ads. Till then address us:

Albert G. Hann, Glen Gardner, N. J.

THE JOHN M. DAVIS STRAIN
ITALIAN QUEENS
BRED THE DAVIS WAY
Guaranteed to please

Untested	**$1.25 each**
Tested	**2.00 each**
After June 30th,	**1.00 each**

Untested only
Cash with order

Little's Apiaries
P. O. Box 122
Shelbyville, Tennessee
Where Quality Reigns

Now closing the season of 1947, we look forward to another, and are doing all we can on our part to merit your continued patronage in 1948.
Season opens May 20th.
WHITE PINE BEE FARMS
(The Home of Northern-bred Italian Queens)
Rockton, Pa.

LEATHER COLORED ITALIAN BEES & QUEENS
Packages with or without queens. All packages are screened. No drones. All queens are laying before they are shipped. We guarantee satisfaction and quick delivery. Located on L & N main line.
M. I. TINDAL & Son
806 Cedar St., Greenville, Ala.

Modern Beekeeping
The picture magazine of beekeeping. We show you with pictures how to do the job easier, quicker, and better. Special inventor's page. One year, $1.00. Free sample copy.
Modern Beekeeping
Paducah, Kentucky.

Announcement

Many of our customers are disapproving our idea of discontinuance of the package bee business. Therefore if you have previously ordered package bees from us send in your requirements for package bees to us and we will see what we can do for you.

We will be happy to hear from anyone who is in need of good Leather Colored Italian Queens.

O. K. Anderson & Son Apiaries
Coffee Springs Box 193 Ala.

WESTERN CANADA BEEKEEPER—official organ of the Manitoba Beekeepers' Association. One year, $1.00; in combination with one year's subscription to Gleanings in Bee Culture, $2.25. Wallingford Building, Winnipeg, Canada.

THE INDIAN BEE JOURNAL—The only bee journal in India. Sample copy against 25 cents (or 1s 6d.) postage stamp. Yearly, 7s, 6d, ($1.50) International Money Order. Apply Bhupen Apiaries, (Himalayas) Ramgarrh, Dist Naini Tal, U. P. India.

Read the South African Bee Journal to be conversant with conditions from far afield. Subscription 5/ per year. For further particulars, write to the Hon. Treasurer, E. E. A. Leach, Box 57, East Rand P. O., Transvaal, South Africa.

PACKAGE BEES .... ITALIANS .... QUEENS
April dates are now practically all taken. Rush your order for May booking before it is too late. Prices to be announced later. Queens shipped to all parts of the world. We solicit foreign correspondence.
Bessonet Bee Company, Donaldsonville, La.

New Design Electric Uncapping Knife
Price $12.00
MACY ELECTRIC KNIFE COMPANY
1239 S. Lorena St. Los Angeles 23, Calif.

ITALIAN QUEENS PACKAGE BEES
Plan Now for 1948
Over-weight packages good young bees headed by queens bred from carefully selected stock with a high record of production.
Efficient Service — Prompt Delivery
Live Arrival Guaranteed
Limited number of desirable shipping dates open at this time.
GEO. A. HUMMER & SONS
Established 1892
Prairie Point, Miss.
Telegraph—Western Union Macon, Miss.
Telephone—Macon 370J4 — 370W1

BETTER BRED QUEENS THREE BAND ITALIANS
We thank our many customers for their patronage this season.
We are now booking orders for 1948.
CALVERT APIARIES — Calvert, Alabama

1948

Babcock's Production Bred Italian Bees & Queens

Now booking orders for April and May shipment.

We offer several thousand four frame nuclei, each containing four combs filled with brood, pollen, and honey; a young laying Italian queen, and two lbs. of young worker bees.

We have shipped these nuclei into every part of the country and our customers report they build up quicker, store more honey, and require less attention than any other package.

These nuclei are sold only in lots of two or multiples of two, and are shipped two nuclei in a single ten frame hive body, partitioned in the middle and screened top and bottom.

One third down books order and choice of shipping dates, balance due ten days before shipment. Orders may be cancelled any time before shipping date, with refund in full. Certificate of inspection and live delivery guaranteed.

Price: two, four six, or ten nuclei ..... $7.50 each
over ten nuclei ..... 7.20 each

Wooden Goods

METAL COVERS, telescoping on all four sides, complete with nails and pure aluminum covering, 5 for .. **$5.95**

BOTTOM BOARDS, standard reversible type, made from 100 per cent pure cypress, 5 for **4.50**

HIVE BODIES, empty, complete with frame rests and hand holds on four sides, 5 for **5.75**

STANDARD TEN FRAME HIVES, complete with telescoping metal covers, hive bodies, bottom boards, and divided bottom bar frames. No inner covers Five for .. **21.00**

All equipment is furnished in ten frame size and is completely dovetailed.

BABCOCK HONEY COMPANY

803 Sumter Street Columbia, S. C.

We are booking orders for Italian Package Bees and Queens for 1948 Delivery
Write for Prices and Details
A. M. Peach
Baldwyn, Miss.

Now booking orders for 1948 Leather Colored Ialian Queens and Package Bees
Write for Price-
LYNN WILLIAMS
Rt. 3 Oroville, Calif.

ITALIAN BEES AND QUEENS
We are booking orders for Spring, 1948. Only 20% with order, balance ten (10) days before shipping date. Prices as follows
2-lb. package with queens, $4.00
3-lb. package with queens, 5.00
4-lb. package with queens, 6.00
THE STAR BEE FARM
Hessmer, La.

Queens of the Golden West
Buy Western-bred queens and package bees for best results. We are now booking orders for spring 1948.
CLIFTON APIARIES
Oroville, Box 684, California

Screw-on Honey Gate for 60-lb. Cans

No drip. Fine for filling jars or pails. Nickel plated. If you are using cans purchased more than a year ago, send a cover. New cans have standard 2½" caps.
$2.00 Postpaid
Ernest Fahlbeck
406 South Springfield Ave.
Rockford, Ill.

A TALK TO BEEKEEPERS

(Continued from page 670)

cluster never goes below approximately 57° F. This cluster temperature may at times rise to a little above 90° F., especially during the late winter months after early brood rearing begins.

Each cluster of bees moves slowly upward on combs that contain honey, hence the importance of having well filled combs of honey in the upper chamber.

This winter cluster is a marvelous phenomenon. I have asked beekeepers at times how their bees keep warm in winter and they told me that the bees simply huddle together to keep warm.

Bees being cold-blooded animals could not keep warm in winter by simply huddling together. Cold-blooded means that the animal is the same temperature as the air surrounding it. However, when a cluster of bees is formed, as already explained, with the bees in the center of the cluster generating heat by muscular activity and the bees on the outside of the cluster retaining a portion of the heat generated, we then begin to get at least a slight inkling concerning the actual workings of a winter cluster of bees. There is still much to be learned about the workings of the winter cluster of bees.

What I Saw While Rabbit Hunting

About six years ago I went rabbit hunting one cold December day. I didn't get any rabbits but I saw something I had never before seen. I passed through one of our apiaries where the colonies were wintered in double-story single-walled ten-frame hives. I tipped up one end of a top story. What a marvellous sight met my eyes. In that hive the winter cluster had been formed with the center of the cluster approximately between the two sets of frames. When I tipped the hive up, the bee cluster, which had been in the form of a sphere, was cut in two and I could plainly see the two halves and the center of the cluster. I then saw what I had been reading about in books. The bees in the rim were perfectly motionless. The bees in the center were moving about and clustered loosely. In a few seconds after being disturbed, of course, the bees in the outside rim became active.

Prices and samples on request.

Let us know:

1. **How much you need.**
2. **Whether for table or industrial use, or both.**
3. **Are you equipped to handle barrels and drums, or must honey be in 60's? Liquid or crystallized?**

R. B. WILLSON, Inc.

150 East 35th Street, New York 16, N. Y.

Telephone: Murray Hill 3-3437

Pollen Substitutes

	1 lb.	5 lb.	10 lb.	25 lb.
Brewers yeast and soy flour expeller mixed 1 to 6		$ .75	$1.50	$3.25
Brewers yeast	$ .40	1.50	2.75	5.50
Soy flour			1.40	2.75
Skim milk powder		1.00	1.75	3.75

Write for prices in large quantities. Include postage if you wish it by parcel post. All prices are collect, Bainbridge, N. Y. Allow 2 pounds for packaging.

M. Y. S. Company Bainbridge, N. Y.

TOO LATE TO CLASSIFY

FOR SALE—1½ tons pure basswood honey, packed in 10-lb. pails. Best offer gets it. Victor Martin, Dodgeville, Wis.

Attractive Honey Labels, gummed, 1000, $2.50; small size, $1.50. Brooks, B 120G, Arkansaw, Wis.

FOR SALE—Comb and extracted honey. Write for prices. James Benson, Galena, Ill.

WANTED — Fall aster honey, any amount. Send sample and price. Rob't. Lane, Greeneville, Tenn.

3000 colonies bees—Dadant size hives. Would sell in units of 500 or more. Reasonable price. Inspection certificate furnished. LIONEL HOPKINS, GREENBUSH, MINN.

WILL SELL 300 colonies bees in lots of 100 or more. Will furnish 1948 reared queens of the best stock. Will deliver in any state in the U.S.A except Montana and Arkansas. Will truck them to you in April or May. Free of disease. Will furnish inspection certificate made 10 days before delivering. If desired can furnish location in irrigated section of N. Dakota. One of the best locations anywhere. Extra supers of drawn combs of the very best. Baughn Stone, Idabel, Oklahoma, Route 2, Box 12.

FOR SALE—SHALLOW SUPERS, 1000 with drawn combs, $2.00 each. 10-frame size. Good condition. No small lot sales. State permit and health certificate furnished. Howard M. Myers, Ransomville, N. Y.

BOOKING ORDERS
for 1948 season

B. J. Bordelon Apiaries
Moreauville, La.

In 1948 Let It Be JENSEN'S

Package Bees and Queens

They have stood the test of time. Packages supplied with "Magnolia State" Italian queens only. Our own development and old stand-by that has won favor in all parts of the world.

Queens bred for disease resistance furnished individually only. None with packages until further notice. Current production capacity already engaged.

In spite of obstacles and handicaps last spring, we are better prepared than ever to serve you well. Thanks for all past favors.

Jensen's Apiaries

Macon, Miss.

The business QUALITY built.

YORK'S

PACKAGE BEES AND QUEENS
QUALITY BRED ITALIANS
For 1948

The Strain That
Honey Producers Prefer

Orders are coming in rapidly for the coming season and it is beginning to look like a very heavy demand is ahead. We urge you to place your orders now, no deposit necessary until prices are announced later for 1948. We are now preparing to make the coming season one of the greatest and will be fully prepared to serve you with the highest quality and best of service. Only neat new cages used and a larger supply of bees and queens than ever will enable us to handle more orders better.

Book your order now, do not delay.

York Bee Company

Jesup, Georgia, U. S. A.
(The Universal Apiaries)

IMPROVISED EXTRACTING EQUIPMENT

(Continued from page 647)

serted in the outer tub to drain off the hot water. A dairy thermometer wired to a spring clothespin can be suspended either in the water or the honey to keep check on the temperature.

This outfit holds a little over 100 lbs. of honey and is not too high when on the stove to lift and empty 60-lb. cans. An occasional slow stir with a wooden paddle helps distribute the heat. In the honey jar shown in the picture is a curved trough made from sheet aluminum which directs the stream of hot honey to the bottom of the jar eliminating bubbles. I have kept honey bottled by this method for over a year in as clear liquid state as when put up.

This tank is also valuable in late fall extracting when the honey is thick. I set it on the stove in the honey house and warm the honey as it comes from the extractor to about 90 degrees before straining. Honey will not stand much heat while it contains bits of wax and propolis or the flavor will be impaired .

Williamsville, N. Y.

LIVE AND LEARN

(Continued from page 655)

of your head that tempus fugits very rapidly. What is in the books that you r e a d, while perfectly sound, might be methods that have been improved. In the comparatively few years that I have been a beekeeper, management has changed considerably. In fact, what many beekeepers are doing today is the exact opposite of what they were doing ten years ago.

That is one of the reasons why you should keep up to date with several bee magazines and belong to as many beekeepers' societies as are within your reach. Absorb the conflicting advice that you get, edit it with a little common sense and a knowledge of the neighborhood you you are in, and you are going to find yourself as big a bug as any that are in your equipment.

Protect your future. Buy your extra Savings Bonds Now.

PACKAGE BEES FOR 1948

File Orders Early for Spring Shipments

Now Booking Orders for Earliest Shipping Dates

All orders for more than two packages SHOULD BE FOR MULTIPLES OF THREE, to make even crates.

All orders should be accompanied by payment of $1.00 PER PACKAGE to confirm and hold shipping date, balance payable before shipping.

PRICES, Quantity Scale:	1 to 9	12 to 48	51 to 99	102-up
2-lb. Pkg. with queen	ea. $4.50	ea. $4.25	ea. $4.15	ea. $4.00
3-lb. Pkg. with queen	ea. 5.65	ea. 5.40	ea. 5.30	ea. 5.15
4-lb. Pkg. with queen	ea. 6.80	ea. 6.55	ea. 6.45	ea. 6.30

Extra Queens, Untested, $1.25, any quantity,
—Tested, $2.00, any quantity.

For queenless packages, deduct $1.25. Loose queen type (late shipment only) add $1.00.

All deposits will be refunded if order is cancelled for any reason.

Above prices will hold unless cost of sugar is materially increased.

The Puett Company Hahira, Ga.

Packages **SUNKIST** **Queens**

Italian

We are taking orders now for Spring 1948 delivery. We urge you to place your order as early as possible. 10% books your order—balance 10 days before shipping. We offer 3-banded Italians—live delivery—health certificate—young mated queens—SATISFACTION.

Prices	1-25	25-up
2 lbs.	$4.25	$4.00
3 lbs.	5.25	5.00
Queens	1.25	1.15

Sunkist Bee Co., Convent, La.

GARON'S BEES & QUEENS

Three-Banded Italians. Also Mraz's Strain Bred for Resistance to A.F.B.

Now booking orders for 1948 for which prices will be announced later.

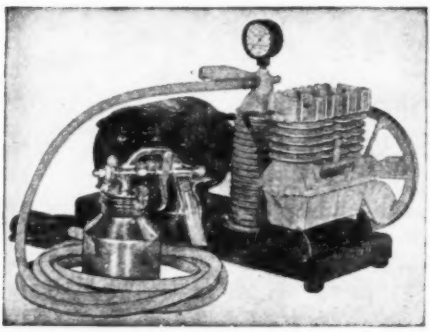
For current year we will produce queens until late November or as long as weather permits.

Prices both breeds: 1-25, $1.00; 26-99, 95c; 100 & up, 90c.

Queens clipped and Airmailed at no extra cost.

Garon Bee Co., Donaldsonville, La.

SPRAY PAINT BEEHIVES



A practical paint sprayer for beehives, extractor rooms, etc.

The compressor has 4 cylinders, 1 3/8" bore, 1 5/8" stroke, and insures complete freedom from pulsation. Condensing chamber for eliminating moisture and oil. Operates from 1/4, 1/3, or 1/2 h.p. single phase electric motor or 3/4 or 1 h.p. gas engine. Air displacement 3.6 c.f.m. to 5.2 c.f.m.

Spray gun needle type, bleeder style 25 lbs. to 50 lbs. pressure, wide fan or small spray; 1 quart capacity aluminum can.

Cat. No. N98—Four cylinder Paint Sprayer, belt, 15 ft. air hose, spray gun, without motor, 48 lbs.,

$67.50

Motors available in 1/4 h.p., 1/2 h.p., and 3/4 h.p. in limited numbers.

The A. I. Root Co. Medina, O.

Italian Queens and Package Bees

We are now booking orders for 1948 delivery, only 20% with order, balance 10 days before shipping date. We guarantee live delivery and health certificate with each shipment.

Prices as follows:

2 lb. pkg. with queen	$4.00
3 lb. pkg. with queen	5.00
4 lb. pkg. with queen	6.00

Clover Bee Farms

HESSMER, LA.

JUST NEWS

(Continued from page 684)

speakers will be in attendance. The Banquet and Fun Fest will be held on Monday Evening and is scheduled for 6:45 P.M. Make your reservations now.—C. D. Floyd, Sec.-Treas.

* * * * *

The Manitoba Beekeepers' Association is holding its annual convention on November 4 and 5 in the Marlborough Hotel, Winnipeg, Manitoba. Beekeepers and those interested in bees are invited to attend. —E. C. Martin, Sec.

* * * * *

The Meeting of the Southern Beekeeping States Federation is scheduled to be held at Buena Vista Hotel, Biloxi, Miss., on Nov. 27th and 28th. Plans are being made for an interesting and constructive program, and it is hoped that every shipper of package bees and queens will make plans to attend.—N. C. Jensen, Secretary.

* * * * *

Mississippi Beekeepers Meet

The first meeting of the Mississippi Beekeepers' Association since the war ended was held at Hattiesburg, September 26. The attendance register was signed by 55 persons from 20 counties, operating 13,813 colonies. M. S. Fortune of Mayhew presided and Dr. Clay Lyle of State College served as secretary.

Homer Tate, Inspector for the State Plant Board, reported AFB was being steadily reduced, as he has inspected over 18,000 colonies during 1947 and found only 24 diseased colonies. The feeding of sulfathiazole is not permitted, he stated, as its feeding might prevent the discovery of the disease and delay its eradication from the state.

Dr. Warren Whitcomb of the Southern Bee Culture Laboratory spoke on the production of package bees and stock improvement. He stated that shippers average only 5 or 6 pounds per colony each season while colonies under test at Baton Rouge have produced as high as 37 pounds of bees from March 15 to the end of May. He gave suggestions for increasing the production of package bees.

Reports read from several bee supply

(See next page)

A FRIENDLY PLACE TO DO BUSINESS

The Daniels Apiaries, Picayune, Miss.

Above photo shows a part of one of our queen yards containing over 10,000 nuclei

1948 Italian Bees and Young Queens 1948

PRICES—WITH QUANTITY DISCOUNTS

	1 to 9	10 to 49	50 to 99	100 and up
2 lb. pkg. with queen (each)	$4.50	$4.25	$4.15	$4.00
3 lb. pkg. with queen (each)	5.65	5.40	5.30	5.15
4 lb. pkg. with queen (each)	6.80	6.55	6.45	6.30
Queens (each) $1.35		Tested $2.00		

We Solicit Large Orders

Overbey Apiaries, Bunkie, La.

JUST NEWS

(From previous page)

firms indicated more optimism over supplies for next season than has existed during the past year.

Dr. E. Oertel from the Laboratory at Baton Rouge discussed honey plants and honey production, which was followed by a barrage of questions.

The problem of migratory beekeepers was presented by Dr. Clay Lyle, Entomologist of the State Plant Board, who stated that the Mississippi law does not prohibit the entrance of bees from other states, but Plant Board regulations require certificates showing complete freedom from disease for two years prior to application for entrance. He also stated that efforts would be made to keep migratory beekeepers from crowding into territory already occupied.

Plans for the meeting of the Southern States Beekeeping Federation at Biloxi, November 27-28 were announced by W. W. Wicht and N. C. Jensen.

A dollar membership fee was adopted and the meeting voted unanimously to join the National Federation of Beekeepers' Associations. A contribution of $10.00 to the American Honey Institute was also voted.

Resolutions were adopted asking the Mississippi Extension Service to provide an Extension Bee Specialist and requesting the Mississippi Experiment Station to provide artificial queen insemination service and to conduct research in stock improvement.

New officers elected were: President, W. W. Wicht, Hattiesburg; Vice-President, Farris Homan, Shannon; Secretary-Treasurer, Clay Lyle, State College.

1948 Package Bees with Queens

Italians

Prices:

3 lb. pkg. with queen,	$5.65
2 lb. pkg. with queen,	4.50
Extra queen	1.35

By Express

We Serve to Serve Again

Sunny South Apiaries

I. Clark, Prop.

Marksville, La.

TANQUARY'S

Italian Bees and Queens for 1948

TANQUARY'S Bees and Queens for good crops. Heavy honey production requires strong, hardy BEES and QUEENS.

Our breeders are selected from our 10,000 honey producing colonies in the Northwest, where our Queens have proven themselves good on honey production.

Order early, without deposit, until December, when our prices for the 1948 season will be out. We assure you our prices will be right.

BEE WISE, ORDER NOW

Tanquary Honey Farms, Inc., Lena, S. C.

Leather Italian Bees and Queens

We are booking orders for 1948 prices to be quoted later, subject to your approval. No deposit required. Every queen and package guaranteed.

The Rich Honey Farms, Jeanerette, La.

We Thank

All our customers who were so cooperative and considerate during the trying 1947 season. We are working hard to prepare for the 1948 season.

GIRARDEAU APIARIES, Tifton, Georgia

Italian Package Bees and Queens

QUEENS Fall Queens a Specialty QUEENS

You send the order; I have the queens

LEATHER COLORED ITALIAN QUEENS
MIDDLE TENNESSEE APIARIES

1 to 25, $1.35; 26 and up, $1.20—From Imported Strains.
¼ books orders. Balance before shipping. All queens clipped and by air mail at no extra cost. (All Queens after June 15, $1.00)

J. B. TATE & SON
1029 No. 4th St., Nashville 7, Tennessee Tel. No. 34509M

STATEMENT OF OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF GLEANINGS IN BEE CULTURE, PUBLISHED MONTHLY AT MEDINA, OHIO, FOR OCTOBER 1, 1947.

State of Ohio, County of Medina ss:

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Alan I. Root, who, having been duly sworn according to law, deposes and says that he is Business Manager of Gleanings in Bee Culture, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form to wit:

1. That the namer and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—

Publisher: The A. I. Root Co., Medina, Ohio.

Editors: E. R. Root and M. J. Deyell, Medina, Ohio.

Business Manager: Alan I. Root, Medina, Ohio.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

The A. I. Root Co., Medina, Ohio; Donald L. Demuth, New York City; J. T. Calvert, Medina, Ohio; H. H. Root, Trustee A. I. Root Estate, Medina, Ohio; E. R. Root, Medina, Ohio; H. H. Root, Medina, Ohio; Ralph I. Bostwick, Oak Ridge, Tenn.; Alan I. Root, Medina, Ohio; Ethel A. Calvert, Alhambra, Calif.; Mrs. Scott Goldthwaite, Chicago, Ill.

3. That the known bondholders, mortgagees, and other security holders owning or holding one percent or more of total amounts of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom the trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is 22,877

(This information is required from daily publications only.)

ALAN I. ROOT, Business Manager.

Sworn to and subscribed before me this 30th day of September, 1947.

DORIS E. WALTZ, Notary Public.

(My commission expires May 9, 1950.)

Be Thrifty, Be Wise

Keep in mind a shipper of PACKAGE BEES who can and will make deliveries in 1948.

That is our only business.

Our prospects are better at this date than in several years.

If you care to place an order now, we will book, subject to your approval of prices when established, without deposit. You have the right at all times to cancel and any deposit will be refunded. If we accept an order we guarantee to deliver.

We will use only new cages, supply health certificate with each shipment, and ship full weight packages with young queens.

Please do not ask us to take your used cages even as a gift. (See state regulations in bee journals.)

Rossman & Long

P. O. Box 133 Moultrie, Ga.

EPHARDT HONEY FARMS
Plaucheville, Louisiana.

CARNIOLAN QUEENS
Booking orders for 1948

FREE SAMPLE COPY!

A card will bring you one free copy by return mail. See what you buy.

THE BEEKEEPERS' MAGAZINE
3110 Piper Road, Lansing 15, Mich.

Protect Your Future
Buy U. S. Savings Bonds

80 YEARS AMONG THE BEES

(Continued from page 671)

after the main honey flow, when the crop was secured. These young bees, added to the force already present, would be better able to stand the rigors of winter than those worn out, and so he urged that we should have a strong force of bees during winter, a large part of which was made up of young bees. It was his contention that a colony, when sufficiently strong and supplied enough winter stores sealed in the combs, could winter with little or no loss, and history has proved that he was right. It is this gospel, originally preached by Mr. Demuth, that has come into general use on the part of commercial beekeepers both north and south.

He expounded the doctrine of the automatic feeder, explaining that the best food that could be given to bees was not sugar syrup but a part of the season's crop, usually that which is gathered and sealed in the comb during the fall. This was one of the most important doctrines ever put before the beekeeping world, but it took years to prove it. In the last 10 or 20 years commercial beekeepers everywhere, if they wish to have a crop of honey and save the bees, will reserve a portion of their crop in the form of a half-depth super of well sealed honey, preferably that produced in the fall, even taking aster if well sealed in the comb. The better grade or table honey can be sold on the market and will bring the top price. Even in localities where there is no fall honey, commercial beekeepers have been reserving a portion of their crop and leaving it for the bees in the fall early enough for them to form a winter nest between the upper and lower set of combs.

This principle of giving the bees a large reserve of good honey well sealed in the fall solves the problem of fall and spring management. To put it another way, it is not necessary to feed the bees either in the fall or the following spring.

After a honey flow and the honey has been extracted, there may be a shortage of food to carry the bees through the winter. The old policy was to feed from 10 to 20 pounds of sugar syrup just before putting the bees into winter quarters in September or October. Even then it was necessary to feed a little additional sugar syrup in the spring. The policy inaugurated by Mr. Demuth was to avoid feeding, and he further argued that the syrup did not contain the food element of sealed honey given in early fall in the form of a super containing 40 or 50 pounds of honey placed on top of the hive. Besides all that it saves a large amount of time. This doctrine will hold true with prices of sugar and honey that prevailed just prior to the second world war, but may hold true at this particular time when honey is holding at much higher levels.

Protect your future. Buy your extra Savings Bonds Now.

Our National Federation

Let's continue to boost and support our Federation because:

(1) It is the organization that helps to hold our industry together —it is comparable to the National Beekeepers' Council of Canada.

(2) Our Federation is interested in and works for the welfare of beekeepers everywhere.

(3) It is the mouthpiece of our industry.

(4) Money is needed to carry on the work of our National Federation. Help yourself by helping the Federation.

Send contributions to:

Sec.-Treas. Glenn O. Jones, Atlantic, Iowa.

Look for this Sign
When You Want
QUALITY AT LOW COST

Trade Mk. Reg.
U. S. Pat. Off.

KELLEY — "The Bee Man"

PRICES CUT ON TIN AND GLASS

1 lb. honey jars, ctn. 24	70c ea.
2 lb. honey jars, ctn. 12	45c ea.
5 lb. honey jars, ctn. 6	
24 cartons	$10.25
Ctn. 50 5 lb. tin pails	$3.75
Ctn. 50 10 lb. tin pails	5.50

Shipment from our Paducah stock same day order is received. No limit—carloads in stock. 5% discount on $50.00 and 10% on $100.00 orders.

The Walter T. Kelley Co., Paducah, Ky.

We are now booking orders
for spring 1948
Only 20% down, balance 20 days
before shipment.

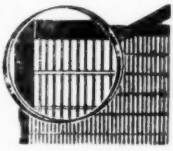
2 lb. package with queen	$4.00
3 lb. package with queen	5.00
4 lb. package with queen	6.00

Dixie Bee Farm
Normand Bros., Prop.
Hessmer, La.

Canada's
National Monthly Magazine
for Beekeepers
Canadian Bee Journal
54 Bloor St., W., Toronto 5, Ont.
U. S. Subscription Price,
only $1.25 per year

SCIENTIFIC BEEKEEPING
New REVOLUTIONARY METHOD
Send for Valuable Free Bulletin
THE BEEMASTER
EARTHMASTER PUBLICATIONS
DEPT. 5, BOX 547 · ROSCOE · CALIFORNIA

THE ONLY WORTHWHILE
QUEEN EXCLUDER
on the market



Chrysler's All Steel Electric Welded Queen Excluder allows maximum bee passage, better ventilation, more honey production. No wood, no sharp edges to injure bees, no burr combs. New rust proofing process. So durably made and accurately spaced that it is permanently Queen excluding and will last a lifetime. Sales increasing steadily each year. For earliest delivery place your order at once. Send for circular E-2.

W. A. CHRYSLER & SON
Chatham - Ontario - Canada

Protect your future.
Buy U. S. Savings Bonds now.

QUEENS

Lots of Nice Young Queens for Immediate Shipment Both Italians & Caucasians

We have about finished package shipments for this season, and are devoting our entire time to the production of good queens. If you need them for queenless colonies, requeening, or making increase, we can supply your needs promptly at the following prices:

1-24	$1.10 ea.
25-99	1.00 ea.
100-up	.90 ea.

Clipped or Airmailed at no extra cost.

The Stover Apiaries

Mayhew, Miss.

MUCH MONEY and STILL MORE TIME

have been devoted to the improvement of the parent DR stock made available through the Iowa Beekeepers' Association.

It is a 100% Effort

to make available to honey producers the best possible DR stock.

Iowa Beekeepers Assn.
State House
Des Moines, Iowa

—GOT A HOBBY?—

Keep up with the latest developments in your field. Here's a group of magazines that specialize in a particular subject! You'll be interested in at least one of these magazines...and you have the assurance that the articles are written by people who know. Send in your subscription today!

HORSES — Per Year
Spokesman and Harness World, m., (for harnessmakers, 3 yrs., $2) $1
The Horse, bi-monthly, breeding, schooling, training, horse sports, $5.
Rider and Driver, m., horse-sport-pleasure, $5.

DAIRYING
Dairy Farmers' Digest, m., $1.

FRUIT
Better Fruit, m., $1.
Eastern Fruit Grower, m., $1.

BEE MAGAZINES
Gleanings in Bee Culture, $1.50 per year.
American Bee Journal, $1.50.

LIVESTOCK
Arizona Stockman, m., $1.
Pacific Stockman, m., $1.
The Polled Hereford, m., $2.
The Sheepman, $1.
Florida Cattleman, $1.
American Cattle Producer, $1.
Coastal Cattlemen, m., $1.

FARMING
Farmers' Digest, m., $2.50.
The Country Book, quarterly, $2.

PIGEONS
American Pigeon Journal, squab—fancy, $2.

POULTRY
Cackle and Crow, the Poultry Paper, $1.
Poultry Billboard, m., $1.

RABBITS
American Angora Rabbit, m., $1.
Angora Rabbit News, m., $1.
The Rabbit Raiser, m., $1.
Small Stock (rabbits, cavies), $1.
American Rabbit Journal, m., $1.
Calif. Rabbit Mag., m., $1.
Calif. Rabbit News, m., $1.

OTHER SPECIALTIES
Modern Game Breeding, m., pheasants, wild waterfoul, etc., $3.
Game Breeder and Sportsman, m., $2.50
Canary World, m., $1.50.
Black Fox Mag., m., fox, mink, $2.
Tailwagger, m., (Dogs) $4.50.

All magazines are monthlies unless otherwise noted; prices are for one full year. Satisfaction guaranteed. All orders are handled promptly and acknowledged. Rush your subscription today. Remit in any way convenient to you.

SEND FOR FREE CATALOG

MAGAZINE MART

Dept G B **Plant City, Florida**

Protect your future.
Buy U. S. Savings Bonds now.

NOTICE

Write for prices for having your wax made up or outright purchase of

SCHMIDT'S

Economy Foundation

Not excelled for quality, strength, and workmanship.

Satisfaction Unconditionally Guaranteed

Oscar H. Schmidt & Sons
R. 4 Bay City, Mich.

Let Us Supply Your Container Needs
$50.00 Orders - 5% discount
$100.00 Orders - 10% discount

GLASS and TIN

½-lb. jars, ctn. 24, wt. 9 lbs.	$0.67
1 -lb. jars, ctn. 24, wt. 12 lbs.	.78
2 -lb. jars, ctn. 12, wt. 11 lbs.	.53
5 -lb. jars, ctn. 6, wt. 10 lbs.	.47
5 -lb. tin pails, ctn. 50, wt. 25 lbs.	4.10
5 -lb. tin pails, ctn. 100, wt. 46 lbs.	7.30
10-lb. tin pails, ctn. 50, wt. 44 lbs.	6.10
60-lb. sq. cans, ctn. 24, wt. 72 lbs.	9.10
2 60-lb. sq. cans in wood ship. cs.	1.40

Label Paste for glass or tin, 60c can
Label samples and prices sent on request.

COMB HONEY CARTONS
for
4¼ x 1⅞, 4¼ x 1½, and 4 x 5 sections
Cellophane Window Cartons — 100, $1.55; 500, $6.65; 1000, $13.20.
Decorated Cellophane Wrappers — 100, $1.15; 500, $4.95; 1000, $9.55.
also
Wooden display and reshipping cases for comb honey.
WRITE FOR PRICES
Prices f.o.b. Boyd, and subject to change without notice.

August Lotz Company
Boyd Wisconsin

OLDEST BEE JOURNAL IN THE ENGLISH LANGUAGE

Keep up on markets, practices, scientific data, regulations, and plant possibilities. 1 year—$1.50; 3 years—$3.00 U. S. and Canada. Foreign postage 25c a year extra.

AMERICAN BEE JOURNAL
Hamilton, Illinois

Australian Beekeeping News
The Leading Bee Journal of the Southern Hemisphere is the
"AUSTRALASIAN BEEKEEPER"
Subscription 8 shillings per year. Start any time. Inquire for International Money Odrer for 8 shillings (Australian) at your Post Office.
Write now to the Editor
P. O. Box 20, West Maitland
New South Wales, Australia

the Hubbard APIARIES

WRITE FOR FREE CATALOG

Quality Bee Supplies Factory Prices
Prompt Shipment from Stock
Satisfaction Guaranteed

THE HUBBARD APIARIES

Manufacturers of Bee Supplies
ONSTED, MICHIGAN

Contents

November, 1947

Wintering the Bees—Roland T. Heacock ..... 641 - 645
Passing of William D. Achord 645
Improvised Extracting Equipment—Harris C. Harvey ..... 646 - 647
The Relation of Agricultural Chemicals to Beekeeping —J. E. Eckert ..... 648 - 651
French Beekeepers Receive Queen Bees from the U. S. —M. Rousseau 651
Don't Try to Fence Bear—Trap Them—Lewis White ..... 652 - 653
Painting Bee Hives—Wm. G. Garnett 653
For Thanksgiving Dinner—Mrs. Benj. Nielsen 654
Live and Learn—Propolis Pete 655
Winter Loss from Colonies and Related Factors —Ed Braun and John E. Geiger ..... 656 - 659
Should We Face Hives South?—Bruce L. Morehouse 660
Beekeeping in South Africa—Louis Hardwick ..... 660 - 661
What Keeps the Smoker from Going Out?—Charles J. Koover 661
Wintering in Two Colony Cases—Bro. Emile 662
Sweet Clover Weevil—Mrs. H. J. Schaffer 662
New Jersey's Largest Field Meeting—E. G. Carr 663
Bees Clean Cut Comb Honey—Anonymous 663
Second Glances—C. M. Isaacson 664
Annotations—Prof. A. Z. Abushady 665
Asked and Answered ..... 666 - 667
A Talk to Beekeepers—M. J. Deyell ..... 668 - 670
80 Years Among the Bees—E. R. Root 671
Editorials ..... 672 - 674
From North, East, West, and South ..... 675 - 682
American Honey Institute News Notes—Mrs. Harriett M. Grace 683
Just News 684
Honey Market 685
National Federation Meeting at Salt Lake City 685

Subscription Rates—United States, Canada, Pan-American countries, and Spain, one year, $1.50; two years for $2.25; three years for $3.00. Single copy, 15 cents. Other countries, 25c per year additional for postage. Discontinuance:—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of address:—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be made by postoffice money order, bank draft, express money order, or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates:—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' reliability:—While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

The A. I. Root Company, Publishers, Medina, Ohio.
E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor.